







THE
LADIES' FLOWER-GARDEN.

Perennials.



Chrysanthemum Indicum.

1. The early Gumption. 2. The quilled Orange. 3. The quilled White.

THE
LADIES' FLOWER-GARDEN

OF
ORNAMENTAL PERENNIALS.

BY MRS. LOUDON.

IN TWO VOLUMES.

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THE
LADIES' FLOWER-GARDEN

OF

Ornamental Perennials.

CHAPTER I.—COMPOSITÆ (*continued*).

GENUS XII.

DAHLIA, *Cav.* THE DAHLIA.

Lin. Syst. SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Involucre double; exterior many-leaved; interior eight-parted. Receptacle flat, chaffy. Flowers of the disk tubular, hermaphrodite; those of the ray ligulate, female or neuter. Achenium naked.

DESCRIPTION, &c.—Few flowers are now better known, or more generally cultivated, than the Dahlia; but, notwithstanding its present popularity, its early history is not generally known. The first printed account of the Dahlia is said to be in Hernandez's *History of Mexico*, published in Madrid in 1651; in which two species are figured under the name of *Acocotli*. Both of these are single flowers, and one appears to be *D. crocata*, and the other *D. variabilis* or *superflua*. There was, however, an Italian work on the Natural History of Mexico, published at Rome about the same time, which had not only a single but a double Dahlia figured in it, under the truly Mexican-sounding name of *Cocozochitl*. In both works the plants are described as having tuberous roots, which have a strong and bitter taste; and Hernandez says that the Mexicans used these roots medicinally as a tonic. The next notice of the plant was by M. Thierry Menonville, who was sent to Mexico in 1787 by the French government to endeavour to steal the cochineal insect and its plant from the Spaniards. This botanist only saw some Dahlias growing in a garden near Guaxaca, and he describes them as having large aster-like double flowers, stems as tall as a man, and leaves like those of the elder. In 1789, *D. variabilis* was discovered in a wild state in Mexico by Baron Humboldt, and sent by him to the Abbé Cavanilles, then Professor of Botany of the Botanic Garden at Madrid. The Marchioness of Bute was at that time a great patroness of floriculture in England, and being in correspondence with the Professors at the different botanic gardens in Europe, Cavanilles sent her some of the seeds the same year that he received them. One of the seedlings raised by Cavanilles produced semi-double flowers in October 1790, and a figure of it was published in the following January in Cavanilles' *Icones Plantarum*, in which the genus was named *Dahlia*, in honour of Andrew Dahl, a Swedish botanist; and the plant figured, which is the same as that now called *D. variabilis*, was christened *D. pinnata*.

Cavanilles afterward figured in the same work two other Dahlias, which he called *D. rosea*, and *D. coccinea*. Tubers and seeds of these three kinds were sent to Paris in 1802, under the idea that the tubers would be eatable; but they were found so bitter and pungent, that they "disgusted both man and beast." In the mean time Lady Bute had raised, from the seeds sent her by Cavanilles, some young plants, which she kept in pots in a greenhouse; but in the course of two or three years afterwards they all died without ripening seeds. In 1802, an English nurseryman named Fraser happening to be in Paris, obtained some of the seeds sent from Madrid of *D. coccinea*, but the flowers produced by his seedlings were bright orange instead of scarlet. Mr. Fraser's plants were kept in a greenhouse, and died without ripening seed. In 1803, Mr. Woodford, a gentleman residing near Vauxhall, procured *D. rosea* from Paris, and it flowered with him in the autumn. In 1804, M. Thouin published a paper on the Dahlia in the *Annales d'Histoire Naturelle*, in which he suggested propagating the plant by dividing its fascicles of tuberous roots; keeping the roots in a state of rest during winter, and allowing the plants to have large pots full of rich earth. In the spring of the same year (1804), Lady Holland sent some seeds of *D. variabilis*, *D. rosea*, and *D. coccinea* from Madrid to England, having been very much struck the previous autumn with the beauty of their flowers in the Madrid Botanic Garden. These seeds were confided to the care of Mr. Buonaiuti, Librarian to Lord Holland, by whose directions they were sown in May on a hotbed in the garden at Holland House, Kensington, where some of the seedlings flowered in the autumn of the same year. Mr. Buonaiuti was very fond of flowers, and knowing that the seeds of the Dahlia had never ripened in England, he took great pains with those of the Holland House seedlings; and by constantly pressing out the moisture which is collected among the florets after the calyx closes, a number of seeds were ripened in 1805, which produced new plants in the following year. In 1807, Mr. Salisbury tried some Dahlias for the first time in the open ground in his garden at Mill Hill. About this time Professor Willdenow attempted to change the name of Dahlia into Georgina, in honour of a Russian botanist named Georgi, under pretence of a similar name to Dahlia having been previously given to another plant by Thunberg. Thunberg's plant was, however, named in honour of an English botanist, Mr. Dale, and was called Dalea (see vol. i. p. 143). In 1808, Count Lelieur began to pay some attention to the culture of the Dahlia in the neighbourhood of Paris; and he introduced into the garden at St. Cloud, from Malmaison, three varieties, from which he raised numerous others. About the same time, M. Otto, curator of the Botanic Garden at Berlin, obtained numerous varieties by hybridization, some of which were very beautiful. When the Continent was thrown open in 1814, the British amateurs and florists who visited it were quite astonished at the beauty of the Dahlias in the French gardens; and since that period, many hundreds of Dahlias have been raised in Great Britain of great beauty of form and brilliancy of colour.

The Dahlia, in its native state, is one of the radiate-flowered Compositeæ, having eight ligulate florets in the ray, and numerous tubular ones in the disk. The ray florets are vulgarly called the petals, and the flower becomes double when these ray florets are greatly increased in number, and those of the disk disappear. When this is not the case, the flower is considered imperfect, and cannot be exhibited, as it is said to show its eye or disk. Sometimes the ray florets become tubular, when they are said to be quilled. Each floret has a membranous, half transparent bract, and when the florets are carefully picked out so as to leave all the bracts remaining, the Dahlia appears changed into a kind of everlasting flower of considerable delicacy and beauty. In judging of a flower exhibited at a show, the attention is directed to three points, viz. form, colour and size; and of these form is considered by far the most important. The form of a show Dahlia should be as nearly round as possible,

with the largest florets at the edge, and decreasing gradually towards the centre, where frequently they are raised into what is called a crown. The outer florets should be broader and flatter than the inner ones, which are always more or less tubular, preserving the character of disk florets, though of the same colour as those of the ray. When there is a crown, the florets composing it should be placed quite close together, so as entirely to hide the disk; as, if either green or yellow be seen in the centre of any Dahlia, it is disqualified from becoming a prize flower. The colour is of no consequence, provided it be clear and bright; and the size is also of little importance, unless the Dahlia be naturally one with large-sized flowers.

The greater number of Dahlias now grown in gardens, have been raised from *D. variabilis*, which varies so much from seed, that dark and light crimson, dark and light scarlet, salmon-coloured, lilac, dark purple, and striped flowers, have been raised from the seeds taken out of one single head of florets.

D. coccinea or *frustanea* only varies from scarlet to orange and yellow, and rarely produces double flowers. It is said not to hybridize with *D. variabilis*. The most common colours among Dahlias are purple and crimson in various shades. A pure scarlet was at first rare, but it is now tolerably frequent. There are now also many yellows and oranges, but a perfectly pure white, or bright light rose, is rarely met with. No blue Dahlia has yet been seen, and even the dark purples have always a reddish tinge. The outer florets are sometimes so much recurved as to make the flowers look ball-shaped, and these are called Globe Dahlias. Sometimes there is only a single row of broad flat florets, while the inner ones are erect and tubular; and these are called Anemone-flowered.

For several years after the rage for double flowers commenced, the only species of Dahlia cultivated in British gardens were *D. variabilis*, or *superflua*, and *D. coccinea*, or *frustanea*; the kind called by Cavanilles *D. rosea* having disappeared. Within the last few years, however, several new species have been introduced; and it is probable more will be discovered as the Flora of Central America becomes better known.

THE CULTURE OF THE DAHLIA requires great care and attention. The soil should be composed of equal parts of sand and loam, enriched with part of an old hotbed, some very rotten cow-dung, or decayed leaves. Fresh stable dung is unsuitable, as it will produce strong stems and large leaves rather than fine flowers. The ground should be well drained, as, though Dahlias require plenty of moisture, they are soon killed if their roots have access to stagnant water. Many cultivators put a deep layer of stones and brickbats at the bottom of the bed, so as to prevent the possibility of water accumulating about the roots. The tubers, having been kept in a dry moderately cool place during winter, are generally planted in pots in February or March, and plunged into a slight hotbed to start them, as the florists term it. They are afterwards removed to the open ground, when they have begun to grow. Or the tubers may be planted at once in the open ground without starting; the tall kinds in May or June, and the dwarf early flowerers in April. The tubers should be planted in rows, about two or three feet apart every way; or in quincunx, about five feet apart in the row, and the rows three feet apart. The situation of the bed should be open and exposed to the sun; and if the weather prove dry, the young plants should be frequently and regularly watered. In planting, care should be taken to arrange the tubers so that the colours may harmonise agreeably. Thus the purples and crimsons, and the crimsons and scarlets, may be separated by yellow, white, or buff, and the salmon-coloured and buff may be separated by white. Dahlias will degenerate if grown more than one year in the same bed without fresh soil or manure. When Dahlias are planted, that have been started in pots, all the earth in the pot should be turned into the hole made to receive it

without breaking the ball ; and the empty flower-pot should be turned over the young plant, to prevent too much evaporation from the leaves. As the plants grow, they should be carefully trained, so as to admit the sun and air to the centre of the plant ; and this is done by tying the stems to stakes fixed in the ground. Sometimes only a single stake is used, to which is tied the main stem of the plant. In whatever way stakes may be used, they should be driven a foot and a half or two feet into the ground before the Dahlias are planted ; as, if this be not done, there is danger of wounding the tubers in driving the stakes into the ground. The stems are tied rather loosely at first to the stakes with bast matting, which is frequently taken off and replaced, as the stems increase, till they have attained their full size. Sometimes, particularly with dwarf Dahlias, the stems are pegged down to the beds, and this plan, when the soil is dry, produces a brilliant effect. Where the object is to produce fine flowers, either for exhibition or seeds, part of the buds and the tips of the shoots are occasionally removed. Where numerous small but early flowers are wanted, the soil should be sandy or gravelly, mixed with a very little loam. Many cultivators shade their flowers when they are intended for exhibition, as both sun and rain will injure the delicacy of the colours.

The plants will generally continue to produce flowers till their leaves and stems become blackened by frost ; and as soon as this is the case, they should be cut down nearly to the surface of the ground ; and, the first fine dry weather that occurs, the tubers should be taken up in the morning and left exposed to the sun during the day. In the evening they must be taken to a dry airy place where they will be safe from frost, and kept there till they are dry enough to have all the soil removed from them, which may be done with a soft brush. They must then be buried in sand, sawdust, or some similar material, and deposited in a dry cellar, a garret, or under the stage of a greenhouse, provided they can be kept dry there ; the great objects to be kept in view being dryness, security from frost, and a moderately cool temperature, which should never rise above 45°, nor sink below 36°. Labels with the name of each Dahlia should be affixed to each fascicle of tubers when it is removed from the ground ; and these labels are generally of zinc, attached by wire.

Dahlias are propagated either by dividing the fascicles of tubers, by cuttings, or by seeds. By the first mode, the roots are planted either in the ground, or in pots plunged in a hotbed, till they are started—that is, till they begin to grow ; they are then taken up, and the tubers cut or pulled asunder, taking care that there is a bud or eye to each. Those which have no buds are termed blind tubers, and they may have buds inserted from other plants, either by cleft or peg grafting. The cuttings are either slipped off from started tubers with a portion of the tuber attached, or made like cuttings of other plants, by taking off part of a shoot in summer. In both cases, they require what is called bottom heat, that is, plunging the pot into a hotbed, to make them strike. Summer cuttings are rarely made, unless it be of some new and very choice sort, as the stems are too succulent to strike easily. The seeds should be sown on a slight hotbed, in February or March, or in a warm border in the open garden. The seedlings must be transplanted into beds, as soon as they have four or six leaves, or they will be drawn up and become weak.

1.—DAHLIA VARIABILIS, Dec. THE VARIABLE DAHLIA.

SYNONYMES.—*D. superflua*, *Ait.* ; *D. pinnata*, *Cav.* ; *D. sambucifolia*, *Sal.* ; *Georgina purpurea*, *Willd.* ; *Dahlia pourpre*, *Thouin.*

ENGRAVINGS.—*Bot. Mag.* t. 1855, A & B ; *Bot. Reg.* t. 55 ; and

our Plate 46, in which it is called *D. superflua*.
SPECIFIC CHARACTER.—Stem not hoary. Flowers of the ray fertile, as well as those of the disk.

DESCRIPTION, &c.—This species is the origin of nearly all the numerous Dahlias now in cultivation. The wild flower had a purple ray of eight nearly flat florets, and a yellow disk. The varieties are, however, single,



1. *Dahlia superflua* (the origin of all the garden varieties) 2. the Sir Robert Peel 3. Harris' Inimitable
 4. *Louise Incomparable*

By J. Taylor, 1840 to the Queen

double, and semi-double; and of every shade of purple, crimson, scarlet, salmon-coloured, buff, orange, yellow, and white. It is said that the colour of the stems of seedlings gives some indication of that of the future flower; the scarlet, crimson, and purple varieties having dark reddish stems, and the white and yellow pale ones. Some florists assert that it is only the Dahlias that have smooth shining florets, that are the true descendants of *D. variabilis*; and those of a velvety texture spring from *D. rosea*; but this assertion does not appear to admit of proof, as all certain traces of the kind called by Cavanilles *D. rosea* have long vanished, and it probably was only a variety of *D. variabilis*. In many of the modern varieties, the flower-heads are nearly flat; but in the Globe Dahlias the florets are so much recurved as to make the flowers appear quite round. The seeds of this species ripen freely; and the varieties may be easily hybridized with each other. *D. variabilis* is a native of the sandy plains of Mexico, whence it was first introduced in 1789.

2.—DAHLIA COCCINEA, Cav. THE SCARLET DAHLIA.

SYNONYMES.—*D. frutranca*, *Ait.*; *D. bidentifolia*, *Sal.*; *D. ponceau*, *Thouin*; *G. coccinea*, *Willd.*; *G. frutranca*, *Dec.*

ENGRAVINGS.—*Bot. Mag.* t. 762; and our *fig. 2* in Plate 47.

SPECIFIC CHARACTER.—Stem hoary. Florets of the ray barren.

DESCRIPTION, &c.—This species is of a much more slender habit of growth than *D. variabilis*; and it is more tender. The flowers are small, the seeds do not ripen freely, and the only colours that have been produced are scarlet, orange, and yellow; the colour of the species being of a dull red. Some persons suppose the scarlet, yellow, and other light or yellowish varieties of *D. variabilis*, to be hybrids between that species and *D. coccinea*; but others assert that the two species will not hybridize with each other; a very remarkable circumstance, if the assertion should prove correct. The first double flower of this species was raised in the Deptford Nursery in 1818; but double flowers of it are by no means common. It was discovered by Baron Humboldt at the same time as *D. variabilis*, but it was not introduced into England till 1802, when a nurseryman named Fraser procured seeds of it from France. Fraser only appears to have raised one plant, which died soon after flowering in 1803; but the species was re-introduced by Lady Holland in 1804, and it has kept its place in our gardens.

3.—DAHLIA CROCATI, Sesse. THE SAFFRON-COLOURED DAHLIA.

SYNONYMES.—*D. fulgens*, *Hort.*; *Georgina crocata*, *D. Don*.
ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 282; and our *fig. 1* in Plate 47.

SPECIFIC CHARACTER.—Stem erect, fleshy, hollow, branched in the upper part. Lower leaves bipinnate or tripinnate; leaflets ovate, acuminate, obtusely serrated. Achenia linear.

DESCRIPTION, &c.—This species is easily distinguished from *D. coccinea*, by its hollow stems (which are exceedingly tall and strong, and only branch at top), and its bipinnate leaves. It was raised from Mexican seeds, in the garden of Mrs. Hatch, at Claybury Hall, Essex, about 1812. The flowers are of a most brilliant scarlet, with a yellow disk; and there are twelve or more florets in a single series in the ray. A sandy soil seems to suit it best, and it must be tied to a tall stake.

4.—DAHLIA SCAPIGERA, Link et Otto. THE WHITE-FLOWERED DWARF DAHLIA.

ENGRAVINGS.—*Flor. Cab.* t. 118; *Botanist*, t. 161; and our *fig. 5* in Plate 47.

SPECIFIC CHARACTER.—Stem very short, procumbent at the base, bearing numerous flower-stems, some of which bear only flowers, and

others flowers and a single pair of leaves. Leaves pinnately divided; leaflets oval, irregularly toothed, and unequally contracted at the base. Florets of the ray fertile.

DESCRIPTION, &c.—This very elegant little plant is generally only about a foot high, and never exceeds two feet. The flowers are white, and the petals are more fleshy than those of the common kinds. It is called scape-

bearing, because the flowers appear to rise on scapes from the root, on account of the shortness of the stem. The roots are not so fleshy as those of the common kinds, and some of them are quite fibrous. This species, like the others, is a native of Mexico, whence it was sent to Berlin; and seeds of it were sent by M. Otto to Mr. Cameron, curator of the Birmingham garden, in 1838. The plant flowers in July and August, and seeds freely; and if the seeds are sown on a hotbed in February, it will flower the same year. In most cases, the roots may be taken up in the ordinary manner; or left in the ground, and protected with a mat, or a covering of straw or dead leaves. No double flowers have as yet been raised of this species.

5.—*DAHLIA GLABRATA*, *Lindl.* THE SMOOTH DWARF DAHLIA.

ENGRAVINGS.—Bot. Reg. for 1840, t. 29; and our *fig.* 4, in Plate 47. cut, ciliated. Florets of the ray fertile. Involucre with the outer
SPECIFIC CHARACTER.—Stem hollow, very smooth. Leaves bipin- leaflets linear and spreading.
nate, and smooth, with a winged rachis. Leaflets ovate-acute, coarsely

DESCRIPTION, &c.—This species differs from *D. scapijera* in growing about three feet high, and having bipinnate leaves, and a hollow stem. The flowers also are lilac and semi-double; and the roots, though fleshy, are slender and uniform in size; instead of being partly tuberous and partly fibrous. This species is also a native of Mexico, whence it was introduced in 1840. It flowers in July, and ripens abundance of seeds. Its culture is the same as that of the preceding species.

6.—*DAHLIA EXCELSA*, *Benth.* THE TALL DAHLIA.

SYNONYMES.—*D. gigantea*, *Bull.*; Tree Dahlia. petioles obscurely connate. Heads of florets sub-corymbose. Florets
ENGRAVINGS.—Botanist, t. 88; and our *fig.* 3 in Plate 47. of the ray neuter.
SPECIFIC CHARACTER.—Stem hoary, hollow. Leaves bipinnate;

DESCRIPTION, &c.—The history of this species is rather remarkable. In 1830, Messrs. Loddiges, having received a basket of orchideous plants from Mexico, perceiving that the stakes fastened across the basket showed signs of life, planted them in the open ground, where they soon grew about ten feet high, but they were killed by the frost in winter. In 1834, a Mr. Bates introduced both roots and cuttings, and from these plants were raised in the Liverpool Botanic Garden, and in Skirving's nursery. In both cases, the plants have been planted in the free ground of a conservatory, and flowered when about twelve feet. The plant rises with an erect stem, generally without branches, but with widely-spreading leaves, which extend about five feet from side to side; and the flowers form a kind of crown at the summit. One of the plants in the Liverpool Botanic Garden attained a height of twenty feet in three years; and in its native country it becomes thirty feet high. Mr. Bates has specimens of both double and single flowers of this species; but the only kind yet seen in England is anemone-flowered, with all the florets of the disk become semi-ligulate, and changed into the same colour as those of the ray. The plants have produced no seeds in England, as all their florets are neuter; but they are readily propagated by cuttings. The stem is woody at the base, and marked with rings from the remains of fallen leaves. It is hollow, and frequently emits a number of fibrous roots.

OTHER SPECIES OF DAHLIA.

D. CERVANTESII, *Lagasca*; *GEORGINA CERVANTESII*, *Swt. Brit. Flow. Gard.*, 2nd, ser. t. 22.

This species is very nearly allied to *D. crocata*; but the stem is solid, very much branched, and covered with numerous small, glossy, light purple warts. The lower leaves are bipinnate, and the flowers are of an



1. *Dahlia crocata* — 2 *Dahlia coccinea* — 3 *Dahlia excelsa* — 4 *Dahlia glabrata*
 5 *Dahlia Scapigera*

orange scarlet, with about nine florets in the ray. A very beautiful variety of this, called *Aurora*, has been raised, but the species does not hybridize with *D. variabilis*. It was introduced in 1820.

D. ROSEA, Cav.

This species, according to some botanists, is the parent of all the velvet-like Dahlias; and if this is the case, it certainly hybridizes and varies freely. Its progeny are also said to be easily distinguished by their bipinnate leaves; but many botanists think that the species now called *D. rosea* is not the same as that of Cavanilles. Introduced in 1804.

D. ASTRANTÆFLORA, Cav.

This species is said to be the parent of all those anemone-flowered Dahlias, which are generally supposed to be varieties of *D. variabilis*. It was introduced in 1812.

D. BARKERII, West et Knowl., Flor. Cal.

Very nearly allied to *D. glabrata*, but having a rough, hairy stem, and not flowering till October. Introduced in 1837.

GENUS XIII.

HELIOPSIS, Pers. THE HELIOPSIS.

Lin. Syst. SYNGENESIA POLYGAMIA SUPERFLUA.

GENERIC CHARACTER.—Involucre many-leaved, imbricated. Receptacle conical, paleaceous. Florets of the disk tubular, hermaphrodite, those of the ray ligulate, feminine. Achenia naked at the apex.

DESCRIPTION, &c.—The word *Heliopsis* signifies Resemblance to the sun; and the genus was established by M. Persoon upon *H. laevis*, which is a very showy, sun-like looking flower. The other species are less brilliant, and not so well deserving of the name. All the species are perennial plants, with opposite leaves, and terminal yellow flowers.

1.—HELIOPSIS LAEVIS, Pers. THE SMOOTH-LEAVED HELIOPSIS.

<p>SYNONYMS.—<i>Helianthus laevis, Lin.</i>; <i>Bupthalmum helianthoides, L'Herit.</i>; <i>Silphium solidaginoides</i>; <i>Rudbeckia oppositifolia.</i></p> <p>ENGRAVINGS.—<i>Bot. Mag.</i> t. 3372; and our <i>fig. 6</i> in Plate 48.</p>	<p>SPECIFIC CHARACTER.—Stem very smooth. Leaves smooth, ovate-acuminate, serrated. External scales of the involucre lanceolate, subserrated.</p>
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DESCRIPTION, &c.—This plant is a native of Mexico, whence it was introduced in 1714. The stem is erect, much branched, and somewhat angular; and the flowers are large and showy. It is quite hardy, and it is propagated either by seeds or dividing the roots.

OTHER SPECIES OF HELIOPSIS.

H. CANESCENS, Kunth; *H. SCABRA, Dec., Bot. Reg.* t. 592.

Very inferior to the preceding species. This species is a native of Peru, whence it was introduced in 1820.

H. BUPHTHALMOIDES, Dec.; *ANTHEMIS BUPHTHALMOIDES, Jacq.*

A native of Peru, introduced in 1798. This species is more tender than the others, and requires protection during winter.

GENUS XIV. COREOPSIS, *Gært.* THE COREOPSIS.

Lin. Syst. SYNGENESIA FRUSTRANEA.

GENERIC CHARACTER.—Involucre many-leaved; scales of the outer series, leaf-like; inner ones membranaceous. Receptacle flat, or slightly raised. Florets of the disk, hermaphrodite and fertile; those of the ray, barren. Pappus with two or three bristles. Seeds flat, slightly winged.

DESCRIPTION, &c.—The name of *Coreopsis* is taken from two Greek words signifying Like a bug, in allusion to the shape of the seeds, which are flat, and resemble that disgusting insect. The species are American perennial plants, with erect stems, generally opposite leaves, and yellow flowers.

1.—COREOPSIS GRANDIFLORA, *Hogg.* THE LARGE-FLOWERED COREOPSIS.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 175; and our *fig. 2*, in Plate 48. | opposite, connate, nearly sessile, fringed with hair at the base. Peduncles elongated, one-flowered. Florets of the ray five-toothed.

SPECIFIC CHARACTER.—Stem erect, branched, furrowed. Leaves

DESCRIPTION, &c.—An elegant plant, three or four feet high, with deeply cut leaves, the leaflets of which are fleshy and linear, elongated and spreading. The flowers are of a brilliant yellow, and the florets of the ray are so deeply toothed, as to give them a fringe-like appearance. The species is a native of North America, whence it was introduced in 1826. It is quite hardy, and will grow in any common garden soil; flowering in autumn. It is propagated by seeds, cuttings, or dividing the root, and it takes readily in all these ways.

2.—COREOPSIS LANCEOLATA, *Willd.* THE LANCEOLATE-LEAVED COREOPSIS.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* t. 10; and our *fig. 4* in Plate 48. | into a petiole at the base. Peduncles elongated, naked. Florets of the ray, four-toothed. Seeds slightly winged, with rough edges. Pappus of two short fringed teeth.

SPECIFIC CHARACTER.—Leaves lanceolate, entire, ciliated, attenuated

DESCRIPTION, &c.—This species is rather more tender than the other kinds of *Coreopsis*, and it is easily killed by moisture as well as frost. It is a native of North America, where Pursh found it growing in hilly situations in Carolina and Virginia. It requires a light, rich, dry soil, and an open, airy situation exposed to the sun. It grows about two feet high, with numerous branching stems, several rising from the same root, and lanceolate leaves. It flowers from August till October, but it seldom ripens its seeds in this country; and consequently, it is generally propagated by division of the root. It may also be increased by cuttings, which should be taken off before midsummer, and planted in a pot which should be plunged in a hotbed, and covered with a hand-glass to make them strike.

3.—COREOPSIS SENIFOLIA, *Michx.* THE SIX-LEAVED COREOPSIS.

ENGRAVINGS.—*Bot. Mag.* t. 3484; and our *fig. 3* in Plate 48.

SPECIFIC CHARACTER.—Leaves opposite, sessile, deeply tripartite;

segments lanceolate, entire. Florets of the ray not toothed. Pappus nearly obsolete.

DESCRIPTION, &c.—This species closely resembles *Chrysostemma* (see vol. i. p. 83) to which at first sight it appears much more nearly allied than to *Coreopsis*. It is a native of Carolina and Georgia, whence it was introduced in 1812. It has small flowers, which are produced in great abundance; and it is easily distinguished by its leaves, which being opposite, and each deeply cut into three lanceolate segments, appear to be in whorls of six each. Though a native of the warmest part of North America, this species is quite hardy in British gardens. It is propagated either by seeds or dividing the root.



1 *Coreopsis aurea* — 2 *Coreopsis grandiflora* — 3 *Coreopsis lanceolata* — 4 *Coreopsis scutellaria*
 5 *Coreopsis verticillata* — 6 *Helianthus laevis*.



4.—COREOPSIS VERTICILLATA, *Lin.* THE WHORL-LEAVED COREOPSIS.

SYNONYMS.—*C. delphinifolia*, *Dec.* ; *C. tenuifolia*, *Pluk.*
 ENGRAVINGS.—*Bot. Mag.* t. 156 ; and our *fig.* 5 in Plate 48.

SPECIFIC CHARACTER.—Leaves opposite, connate, deeply cut ; segments linear. Florets of the ray entire.

DESCRIPTION, &c.—This very handsome species produces its showy flowers from July to October. It has a slender stem and leaves, but it grows three or four feet high, and sometimes more. It is a native of North America, introduced in 1759, and it is propagated by dividing its roots. It is quite hardy, and will grow in almost any soil and situation.

5.—COREOPSIS AUREA, *Ait.* THE GOLDEN COREOPSIS.

SYNONYME.—*C. trichosperma*, *var. aurea*, *Nutt.*

ENGRAVINGS.—*Bot. Reg.* t. 1228 ; and our *fig.* 1 in Plate 48.

SPECIFIC CHARACTER.—Leaves deeply serrated, opposite ; three or

five-parted ; segments lanceolate-linear, elongated at the point. Florets of the ray eight, oblong, entire, three times as long as the scales of the involucre.

DESCRIPTION, &c.—A very showy species, growing about three feet high, with the stem very little branched. The flowers are large, of a rich golden yellow, and very handsome. It is a native of North America, whence it was first introduced in 1789, by Lord Tankerville, but it was soon lost. It was re-introduced about 1826. It is a biennial, and quite hardy in British gardens. It is propagated by seeds.

OTHER SPECIES OF COREOPSIS.

C. TRICHOSPERMA, *Nutt.*

A native of Carolina, with pinnate leaves ; introduced in 1822. It is a rather tender biennial.

C. DISCOLOR, *Lin.*

A handsome species, the florets of which have a spot at the base. A native of North America ; introduced in 1818.

C. AURICULATA, *Lin.*

A native of North America ; introduced in 1699.

C. CRASSIFOLIA, *Ait.* ; *C. LANCEOLATA*, *var. VILLOSA*, *Dec.*

The leaves are entire and fleshy. A native of Carolina ; introduced in 1786.

C. GLADIATA, *Dec.* ; *C. DICHOTOMA*, *Michx.*

Leaves alternate, ensiform. A native of North America ; introduced in 1827.

C. ANGUSTIFOLIA, *Lin.*

Leaves alternate, very narrow. A native of North America ; introduced in 1778.

GENUS XV.

HELIANTHUS, *Lin.* THE SUNFLOWER.*Lin. Syst.* SYNGENESIA FRUSTRANEA.

GENERIC CHARACTER.—Involucre many-leaved, imbricated. Receptacle flat, chaffy. Florets of the disk, tubular, hermaphrodite ; those of the ray ligulate, neuter. Seeds compressed, and crowned with two or more bristle-shaped deciduous scales.

DESCRIPTION, &c.—The annual Sunflower is so well known, that it would be useless to give any description of the flowers of the genus, were not some of these flowers extremely unlike those of the common species. All the kinds, but one, are natives of America ; and they are all quite hardy and of easy culture in British gardens.

The Jerusalem artichoke (*H. tuberosus*) is used as an esculent vegetable. Several new genera have been made out of the Linnæan genus *Helianthus*; but the differences are only trifling. *Helianthus* signifies literally, Sunflower. The species are generally tall, coarse-growing annual or perennial plants, very rarely becoming shrubby at the base. The leaves are opposite or alternate, generally entire and rough. The flowers are terminal, and generally produced singly. They are always yellow, and in most cases large and showy.

1.—*HELIANTHUS DECAPETALUS*, *Lin.* THE TEN-PETALED SUNFLOWER.

SYNONYME.—*H. frondosus*, *Pursh.*

ENGRAVINGS.—*Bot. Mag.* t. 3510; and our *fig.* 2, in Plate 49.

SPECIFIC CHARACTER.—Leaves opposite, except the upper ones, and

the bracts sub-rhomboid-ovate, acuminate, grossly serrated; rough and somewhat three-nerved. Leaflets of the involucre linear-acuminate. Chaff scabby. Florets of the ray entire, never exceeding ten.

DESCRIPTION, &c.—The stem is four or five feet high; much branched, and rough. The leaves are rough on both sides, of a lively green above, but paler below. The flowers are rather small and drooping, and of a pale yellow. The florets of the ray never exceed ten. The anthers are of a purplish black. The species is a native of Canada, and the northern parts of North America, whence it was introduced in 1759. It is quite hardy in British gardens. There is a variety in which the scales of the involucre become leafy.

2.—*HELIANTHUS PUBESCENS*, *Vahl.* THE DOWNY SUNFLOWER.

SYNONYMES.—*H. tomentosus*, *Michx.*; *H. Hookeri*, *G. Don*; *H. doronicoides*, *Dec.* The Illinois sunflower.

ENGRAVINGS.—*Bot. Mag.* t. 2778; and our *fig.* 1, in Plate 49.

SPECIFIC CHARACTER.—Leaves opposite, sessile, half-stem clasping, ovate-lanceolate, crenately serrated, hirsute. Stem hairy, rough. Scales of the involucre linear-lanceolate, pubescently ciliated.

DESCRIPTION, &c.—This species is a hardy perennial, frequently growing eight feet high, with a rough stem, divided at the summit into a panicle of flowers. The leaves are thick and rigid, placed opposite to each other, except the upper ones, and they generally partially sheath the stem at their base. Two of the side ribs in each leaf, are much longer and stronger than the others, but as they do not spring from the base, the leaf can scarcely be properly called three-nerved. A native of the Southern States of North America; but quite hardy in British gardens. It was introduced in 1795.

3.—*HELIANTHUS SPECIOSUS*, *Hook.* THE SHOWY SUNFLOWER.

SYNONYMES.—*Leighia speciosa*, *Cass.*; Mexican Sunflower.

ENGRAVINGS.—*Bot. Mag.* t. 3295; and our *fig.* 3, in Plate 49.

SPECIFIC CHARACTER.—Leaves cordate, entire, or three-lobed. Pe-

duncle fleshy. Scales of the involucre leafy. Chaff much longer than the tube of the flower. Pappus in two very long fringed bristles.

DESCRIPTION, &c.—This very showy plant bears so very slight a resemblance to a Sunflower, that Sir. W. J. Hooker, to whom a specimen was shown, was quite at a loss where to place it. Its flowers in shape approach very nearly to those of the Marigold, or of the genus *Tithonia*; and its seeds were sent from Mexico to Manchester in 1833. The following description of this species is taken from the Botanical Magazine for 1834, vol. 61 :—"Only one seed vegetated. The label on the paper was *Composita speciosa*, and it was said to come from Jorullo. The plant came up to the length of about eighteen inches, very much like a common Sunflower, the outer and lower leaves being large, and the inner ones smaller, and very close together at the top, as in the common Sunflower, with all the leaves entire. It then threw out lobed leaves, and became a very different looking plant. It rose to the height of about five feet, beset with branches very thickly all the way from the bottom to the top, the lower ones projecting nearly horizontally from the plant, turning up at the ends, and about eighteen inches long; the rest gradually decreasing in length up to the top, and forming a complete cone. The



1. *Helianthus luteus*, 2. *Helianthus scaberrimus*, 3. *Helianthus annuus*.

first flower which appeared was at the termination of the main branch, and quite erect; and afterwards each lateral branch threw out a flower at its termination, rather in a horizontal direction, the end of the flowering stalk inclining upwards. The stem is round, and covered with a fine silky substance, but the leaves are rather coarse, and subject to be infested with aphides." I have given a detailed account of this fine species, which is now lost to our gardens, in the hope that, now the communication is so frequent between Britain and Mexico, that it may be re-introduced.

OTHER SPECIES OF HELIANTHUS.

H. LINEARIS, *Cav., Bot. Reg.*, t. 523; H. SQUARROSUS, *Thunth*; LEIGHIA LINEARIS, *Cass.*

This plant is very nearly allied to the last-mentioned species, and, with it, forms the genus *Leighia* of Cassine, which differs from the true Sunflower in its pappus; in the leafy appearance of the scales of the involucre; and in the fleshiness of the flower stalk just below the flower. The florets of the ray have no pappus, but those of the disk have six small serrated scales, besides two long, awl-shaped, and opposite bristles. The species is a native of Mexico, whence it was introduced in 1823. The plant is quite hardy, but dwarf; and its flowers are smaller than those of any other kind of Sunflower, not exceeding an inch in diameter.

H. MULTIFLORUS, *Lin. Bot. Mag.*, t. 227.

This species is the perennial Sunflower, so frequently found in gardens. There is a double-flowered variety. The species is a native of North America, whence it was introduced in 1597. It is quite hardy, and will bear the smoke of London and other large towns, better than the generality of flowers. It flowers from June to September, and is propagated by dividing the roots.

H. TUBEROSUS, *Lin.*

This is the Jerusalem Artichoke, so called from the Italian name for the Sunflower, *Girasole* (signifying, to turn to the sun), being corrupted into Jerusalem. The fact is, however, that none of the Sunflowers do turn to the sun; and, that they only derive their name of Sunflower, from their resemblance to the vulgar notion of the sun's disk. Thus a gold Sunflower was worn by the Priests and Virgins of the Sun in Peru; as affording a kind of image of the god they worshipped. The Jerusalem Artichoke is a native of Brazil, whence it was introduced in 1617; and it was long thought a very superior vegetable to the potato—both being at first dressed with sack and sugar.

H. DIFFUSUS, *Bot. Mag.* t. 2020; H. ATRORUBENS, *Dec.*

The stem is purplish, with widely-spreading branches, each bearing a terminal flower on a very long peduncle. The whole plant is clothed with stiff stringing hairs; and though it does not grow above two feet high, it spreads widely. A native of the banks of the Missouri, introduced in 1732. It is quite hardy in British gardens; and, though it has a rambling habit of growth, which renders it unsuitable for small gardens, unless its branches are pegged down to the ground, its flowers have the property of remaining unchanged a long time in water, after they are cut.

H. ANGUSTIFOLIUS, *Willd.; Bot. Mag.* t. 2051.

A weedy-looking plant, with very narrow leaves, and long slender florets to the ray. It is a native of Carolina, whence it was introduced in 1789. It requires protection during winter, but is not worth the trouble of cultivating, as the flowers have no beauty to recommend them.

H. MOLLIS, *Willd.*; *Bot. Mag.* t. 3689.

This species, though frequently confounded with *H. pubescens*, is in fact much more nearly allied to *H. decapetalus*, from which it is chiefly distinguished by the softness of its leaves, while those of *H. decapetalus* are rough. The species called *H. pubescens* in the Botanical Register is alike different from this species and the *H. pubescens* of Vahl. It is probably *H. strumosus*, its root being carrot-shaped, as in that species.

There are several other kinds of Helianthus, but they are seldom seen in British gardens.

GENUS XVI.

TAGETES, Cav. THE ERECT MARIGOLD.

Lin. Syst. SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Scales of the involucre combined into a campanulate cup, which is toothed at the apex. Receptacle honeycombed. Achenium elongated, tapering to the base. Pappus composed of unequal palae.

DESCRIPTION, &c.—The French and African Marigolds, both annual flowers, give a good idea of this genus; but the perennial species have smaller and less showy flowers. All the species are natives of Mexico or Brazil, and most of them are rather tender in British gardens. The name of Tagetes is derived from Tages, a demi-god, celebrated for his beauty, who was the grandson of Jupiter, and son of Genius, and who is fabled to have taught the Tuscans the art of divination.

1.—TAGETES CORYMBOSA, Swt. THE CORYMB-FLOWERED TAGETES.

ENGRAVINGS.—Swt. Brit. Flow. Gard. t. 151.

VARIETIES.—T. c. 2 lutea, T. tenuifolia, Sw. Brit. Flow. Gard. t. 141. T. c. 3 maculata; T. corymbosa, Bot. Mag. t. 3830; and our fig. 2 in Plate 51.

SPECIFIC CHARACTER.—Stem erect, angular, crowded at the apex with a corymb of many flowers. Leaves pinnate; leaflets lanceolate, and sharply serrated. Scales of the pappus three; one twice as long as the others, awl-shaped, and fringed.

DESCRIPTION, &c.—These very handsome plants are generally called annuals; but the fact is they never ripen their seeds till the second year after sowing; and if preserved from frost they will continue in flower all the winter, producing a succession of blossoms, till spring, when they begin to ripen their seeds. In the warmer parts of the west of England, the variety we have figured becomes a true perennial, living several years without renewing. The species is a strong-growing plant, with a rather coarse stem, three or four feet high, and the florets of the ray orange, but nearly covered with a deep purple spot. This plant is a native of Mexico, introduced in 1825. The yellow variety has a slender stem, and very beautifully cut leaves. It was also introduced from Mexico in 1825. It is well deserving of cultivation, and it succeeds best when its seeds are sown in May, in the open ground, and the plants taken up and potted in autumn, so as to be kept in a cool frame all the winter, and replanted in the open ground in May, when they will flower splendidly all the summer. The spotted kind, which we have figured, was sent from Mexico in 1836, and it requires exactly the same treatment as the yellow-flowered variety.

2.—TAGETES FLORIDA, Swt. THE BRIGHT-FLOWERING TAGETES.

ENGRAVINGS.—Swt. Brit. Flow. Gard. 2d ser. t. 35; and our fig. 1 in Plate 51.

SPECIFIC CHARACTER.—Stem erect, branched. Leaves opposite,

simple, somewhat stem-clasping; oblong-lanceolate, sharply serrated. Corymb many-flowered.

DESCRIPTION, &c.—This is the hardiest of all the species, as turning a flower-pot over the root will be sufficient to protect it during winter, even if the weather be severe; and when it is not, the plant may remain uncovered. It grows best in a light rich soil, or peat will suit it very well, and make the flowers of a darker orange. The species is a native of Mexico, whence it was introduced in 1823.



Tagetes arvensis — *Tagetes arvensis* — *Tagetes arvensis*



TAGETES LUCIDA, *Cav., Bot. Mag. t. 740; & Bot. Rep. t. 359.*

The sweet-scented Tagetes, or Chilian Marigold. This species, though a native of Chili, will live in the open ground in Britain with very slight protection. It will grow in any soil, but thrives best in a strong loam. Its flowers are small, and of rather a dingy orange, but they smell like honey. The species was introduced in 1798.

GENUS XVII.

ERIOPHYLLUM, *Lagasea*. THE ERIOPHYLLUM.

Lin. Syst. SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Involucre one-leaved, campanulate, eight-toothed, woolly. Florets of the ray feminine, those of the disk hermaphrodite. Receptacle conical, honeycombed. Pappus palaceous, four-toothed.

1.—ERIOPHYLLUM CÆSPITOSUM, *Doug.* THE TUFTED ERIOPHYLLUM.

SYNONYMS.—*Actinella lunata, Pursh; Trichophyllum lunatum, Nutt.; Hilceniun lunatum, Spreng.; Bahia lunata, Dec.*
 ENGRAVINGS.—*Bot. Reg. t. 1167; and our fig. 3, in Plate 51.*

DESCRIPTION, &c.—A showy plant, producing great abundance of yellow flowers in the months of May and June. It is a native of North-West America, where it was found and sent home by Douglas in 1827. It is a decumbent plant, growing in tufts, and spreading over the rocks and banks bordering the rivers. It is quite hardy in England, and only requires to be grown in a dry open situation. Hence, it is admirably adapted for rockwork, as it will soon form a large dense patch, ornamental from its glaucous leaves, even when the plant is not in flower. The whole plant is covered with a soft whitish wool; and it has been observed that these plants look better than any others on rockwork. As it flowers early, it ripens its seeds freely; and hence, it may be propagated either by them or by dividing the roots. In either case all the particular culture it requires is to let the soil in which it grows be neither too moist, nor too rich. It is well adapted for a bed in a geometrical flower-garden, from the closeness with which it covers the ground.

GENUS XVIII.

ACHILLEA, *Lin.* THE MILFOIL.

Lin. Syst. SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Involucrum ovate, imbricated. Receptacle narrow, flat, chaffy. Pappus wanting. Florets of the ray few.

DESCRIPTION, &c.—The common Milfoil or Yarrow is well known from its curiously cut leaves, and close corymbs of flowers. This plant was formerly supposed to possess certain mystical properties to protect the wearer against witchcraft, particularly in battle; and it was esteemed an excellent vulnerary. It was called in Scotland Knight's Milfoil, or Soldier's Woundwort, because it was supposed to be a "sovereign remedie" against all wounds made with a spear. The same feeling respecting its virtues appears to have prevailed among the Greeks, as it was called Achillea, from Achilles having learnt its virtues when a pupil of the Centaur Chiron, and having used the juice of the crushed leaves medicinally to cure the wounds of his friends. In more modern times the common Milfoil was called Old Man's Pepper, from its fleshy roots possessing pungent qualities; and it is still frequently called Hundred Leaves from the numerous divisions of its bipinnatifid leaves. The Sneezewort,

and its allies, which were formerly included in the genus *Achillea*, are now placed in a separate genus called *Parnica*; and of the species of Milfoil, very few are grown in gardens. Nearly all the species are natives of Europe; and the few that are not, are found in Asia. None have yet been discovered in Africa, America, or Australia. All the species are hardy, and some of them are rather pretty.

1.—*ACHILLEA TOMENTOSA*, *Lin.* THE YELLOW MILFOIL, OR GOLDEN YARROW.

ENGRAVINGS.—*Bot. Mag.* t. 498; and our *fig.* 3, in Plate 50.

SPECIFIC CHARACTER.—Leaves woolly, bipinnatifid; segments crowded, linear, acute. Corymbs repeatedly compound.

DESCRIPTION, &c.—This very pretty little plant, which is admirably adapted for rockwork, seldom grows more than six inches high. The whole plant is covered with a soft woolly down, which looks nearly white at a little distance, and contrasts prettily with the bright yellow of the flowers. The species is a native of Spain and the South of France, whence it was introduced in 1658. In Sowerby's English Botany, it is said to be found occasionally in dry hilly pastures in Scotland and Ireland; but it can only be of very rare occurrence. It will grow in any dry soil; and it is propagated by dividing the root.

2.—*ACHILLEA CLAVENÆ*, *Lin.* CLAVENA'S SILVERY-LEAVED MILFOIL.

SYNONYMS.—*Parnica Clavennæ*, *Dec.*; *P. incana*, *Boerh.*; *Ab-sinthium alpinum*, *Clus.*; *A. umbelliferum*, *Clav.*; *A. latifolium*, *Bauh.*; *A. album*, *Lob.*; *Antabsinthum Clavennæ*, *Spec.*; *Dracunculus alpinus*, *Mor.*

ENGRAVINGS.—*Bot. Mag.* t. 1287; and our *fig.* 2 in Plate 50.

SPECIFIC CHARACTER.—Leaves woolly, pinnatifid; segments linear, obtuse, slightly dentated at the tip. Corymbs simple.

DESCRIPTION, &c.—This very pretty plant, bearing considerable resemblance to the English Sneezewort, has been replaced by De Candolle in the genus *Parnica*; in which it was put by Boerhaave above a hundred years ago, though it was considered by Linnæus to belong to the genus *Achillea*, and is generally placed there in botanical collections. It is a native of Styria, and it was first discovered in that country by Clusius, who found it growing on steep rocks, where it was obliged to send its roots down through the fissures in search of nourishment. It was afterwards found on Mount Serva, by Nicolas Clavena, an apothecary at Belluna, in the Venetian territory. Clavena wrote a treatise on the virtues of the plant, and procured a kind of patent for selling it; that is, permission to prepare a sort of conserve from it, which should be sold only by himself. This occasioned warm disputes; as some of the medical men of Venice asserted that Clavena had no right to any exclusive privileges respecting a plant which had been first discovered and described by Clusius. However, there is no doubt that the plant was named by Linnæus in honour of Clavena, and that consequently the specific name should be *Clavennæ*, and not *Clavennæ*, as it is spelled by Hale, Linneus, and other botanists. The species was introduced from Austria in 1656; and it is of the easiest culture in British gardens, only requiring a dry soil.

OTHER SPECIES OF *ACHILLEA*.

A. *MILFOLIUM*, *Lin.*, var *RUBRA*, *Dec.*, and our *fig.* 1, in Plate 50.

This is only a pink-flowered variety of the common Milfoil or Yarrow; but it is really a very pretty garden flower, and well deserving of cultivation, as it will grow in any soil or situation. It is a British plant, having been accidentally raised from seed of the Yarrow, which is common by the road-side in every part of Britain.

A. *PTARNICA*, *Lin.*

The Sneezewort is another British plant, well deserving of cultivation.



1. *Achillea millefolium* 2. *Achillea tomentosa* 3. *Achillea ptarmica*
4. *Marshallia caespitosa*

GENUS XIX.
MARSHALLIA, *Nutt.* THE MARSHALLIA.

Lin. Syst. SYNGENESIA ÆGNALIS.

GENERIC CHARACTER.—Involucre generally in two series. Scales linear, lanceolate, equal. Receptacle convex, palea linear, acute. Corollas tubular, five-toothed, hairy on the outside. Achenium turbinate, hairy. Pappus consisting of five equal elliptic, acuminate, entire palea.

DESCRIPTION, &c.—Natives of North America, with entire, alternate leaves, and a head of flowers somewhat resembling that of clover. The genus, we are told, in the Botanical Magazine (Vol. 65) was “named in 1791, in compliment to Mr. H. Marshall, who wrote a history of the trees and shrubs of North America,” to which country, and Mexico, the species are entirely confined.

1.—MARSHALLIA CÆSPITOSA, *Nutt.* THE TUFTED MARSHALLIA.

ENGRAVINGS.—Bot. Mag. t. 3704; and our *fig.* 4 in Plate 50.

SPECIFIC CHARACTER.—Smooth, tufted. Stem simple, without leaves, and with only one head of flowers. Leaves elongated, lanceo-

late, entire. Scales of the involucre oblong, linear, obtuse. Palea of the receptacle linear.

DESCRIPTION, &c.—A singular-looking plant, which, when many heads are grown near together, has very much the appearance of Gigantic Thrift. It is a native of Texas, whence it was introduced in 1837. It is not quite hardy in British gardens, being killed by severe frosts; and it is hardly worth the trouble of protecting. I have, however, mentioned it as a curious plant, and to give my readers an idea of what kind of plant it is, if they should see its name. Besides, it may please many persons, though it does not happen to take my fancy. It is propagated by seeds, and should be grown in light soil.

M. LANCEOLATA, *Dec.*

A native of Carolina, introduced in 1812. It has lilac flowers, which appear in August and September, about a month later than those of *M. cespitosa*.

M. LATIFOLIA, *Dec.*

A native of Carolina, with lilac flowers and broad leaves. Introduced in 1806. It was on this species that the genus was founded. Micheaux had called it Persoonia, but another genus having been called Persoonia by Sir J. E. Smith, Persoon called it Trattinickia. This name having been also appropriated by Willdenow, it was lastly called Marshallia, a name which now seems to be generally adopted.

M. ANGUSTIFOLIA, *Dec.*

This species has never been introduced. It has narrow leaves, as the name imports.

GENUS XX.
ANTHEMIS, *Lin.* THE CHAMOMILE.

Lin. Syst. SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Florets of the ray ligulate, lanceolate, numerous. Calyx imbricate, subequal, hemispherical. Leaves much cut, flowers terminal.

DESCRIPTION, &c.—The common Chamomile is only grown in gardens for medicinal purposes, but the Chinese Chamomile is so elegant a plant that it well deserves culture. The word Anthemis signifies covered with flowers.

1.—ANTHEMIS APIIFOLIA, *R. Br.* THE PARSLEY-LEAVED CHINESE CHAMOMILE.

SYNONYMS.—*A. parthenoides*, *Dec.*; *Matricaria parthenoides*, *Desf.*; *Pyrethrum Chrysanthifolium*, *Hort.*
 ENGRAVINGS.—*Bot. Reg.* t. 527; and our *fig. 5*, in Plate 50.

SPECIFIC CHARACTER.—Leaves very smooth, pinnatifid; lobes wedge-shaped, trifidly cut. Flowers solitary. Leaflets of the involucre linear, rough at the tip.

DESCRIPTION, &c.—This very pretty little plant has very much the appearance of a double white Daisy, and it bears such a profusion of flowers as well to merit the name of *Anthemis*, or flower-covered. From the profusion of flowers, plants of this species are very suitable to cover a bed in a formal flower-garden, where they will form a mass of snow-white blossoms. They are also well adapted for rockwork. The species is a native of the South of Europe, whence it was introduced in 1764. It is quite hardy in British gardens, but it grows best in light rich soils. It is propagated by dividing the root.

2.—ANTHEMIS PYRETHRUM, *Lin.* THE PELLITORY OF SPAIN.

SYNONYMS.—*Anacylus Pyrethrum*, *Dec.*
 ENGRAVINGS.—*Bot. Mag.* t. 462; and our *fig. 5*, in Plate 52.

SPECIFIC CHARACTER.—Stem simple, decumbent, one-flowered.
 Leaves pinnate; leaflets much cut.

DESCRIPTION, &c.—The Pellitory of Spain is frequently mentioned in the older herb books, on account of its efficacy in cases of tooth-ache. The root being very hot and pungent, was supposed to expel the cold which had taken possession of the teeth—such very odd ideas had our forefathers on the subject of medicine. The Pellitory of Spain was cultivated in England before 1570, and for about half a century it appears to have been a favourite garden flower; and, even when for a time it had been lost, it was recovered by the celebrated Miller, picking out some seeds of it from a box of raisins, in 1732. It is now seldom seen in gardens, though it well deserves cultivation from its delicate little leaves, and large snow-white flowers, the florets of the ray of which are pinkish on the under side. It is propagated by dividing the root; and though it is a native of Spain and Portugal, it does not ripen its seeds in this country, and, indeed, is killed by a severe winter. A very little protection, however, would be sufficient; and it deserves some little care, either as a plant for covering a bed in a flower-garden; or, for rockwork, on which it is extremely ornamental.

OTHER SPECIES OF ANTHEMIS.

A. MORSCHALLIANA, *Dec.*

This is a very handsome species, with yellow flowers, a native of Caucasus, when it was introduced in 1828. There is a variety of this species called *A. M. Rudolphiana*.

A. NOBILIS, *Lin.*

Is the common Chamomile, a decoction of the flowers of which is very frequently used as a tonic in domestic medicine. The flowers are white, with a yellow disk.

A. AUREA, *Dec.*; ANACYCLUS, *Lin.*

Has yellow flowers, and was introduced before 1570 from the South of Europe.

There are many other species, most of which are dwarf plants well suited to rockwork.



1. *Gallardia bicolor*. — 2. *Gallardia aristata*. — 3. *Pyrethrum uliginosum*.
 4. *Pyrethrum carnaum*. — 5. *Anthemis Pyrethrum*.

GENUS XXI.

CHRYSANTHEMUM, *Lin.* THE CHRYSANTHEMUM.*Lin. Syst.* SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Flowers radiate. Calyx hemispherical, imbricated, scales with a membranaceous lining.

DESCRIPTION, &c.—The plants contained in the genus *Chrysanthemum* have frequently changed their names ; and all, with the exception of the annual species, have been removed to *Pyrethrum*, a genus formerly restricted to the feverfew and a few other similar plants, which were called *Pyrethrum*, from the Greek word for fire, because they have a hot fiery taste. The word *Chrysanthemum* signifies “Golden flower ;” and it was given to the genus by Linnæus, from the first species described happening to have yellow flowers. I have retained all the Linnæan species in the genus, as they have most of them become popularly known by their botanic name.

1.—CHRYSANTHEMUM COCCINEUM, *Willd.* THE SCARLET CHRYSANTHEMUM.SYNONYMES.—*Pyrethrum carneum*, *Dec.* ; Dwarf rose *Chrysanthemum*.ENGRAVINGS.—*Bot. Mag.* t. 1080 ; and our *fig.* 4, in Plate 52,under the name of *Pyrethrum carneum*.

SPECIFIC CHARACTER.—Leaves glabrous, pinnate ; leaflets pinnatifid ; segments acute. Peduncle fleshy.

DESCRIPTION, &c.—This very pretty little plant is a native of Mount Caucasus, whence it was introduced in 1804. It is quite hardy, and it does best in a poor soil ; as, when the soil is rich, the plant grows too much to stems and leaves, and the flowers are small and pale. The flowers appear in the beginning of August, and they continue till the latter end of September. The plant is increased by dividing the roots. It is badly named, as the colour of the flowers is pink rather than scarlet.

2.—CHRYSANTHEMUM ULIGINOSUM, *Pers.* THE LARGE MARSH OX EYE.SYNONYMES.—*Pyrethrum uliginosum*, *Waldst. et Kit.* ; *C. lacustre*, *Brot.*

SPECIFIC CHARACTER.—Stem erect, branched in the upper part. Leaves sessile, lanceolate, irregularly, but deeply serrated. Flowers corymbose.

ENGRAVINGS.—*Bot. Mag.* t. 2706 ; and our *fig.* 3, in Plate 52.

DESCRIPTION, &c.—This plant though described in the Botanical Magazine as an annual, is in fact a perennial ; though its plants when sown very early in spring will produce flowers the following October. Sometimes it is treated as a biennial, its seeds being sown in August and the young plants kept in a cool frame during winter, to be planted out again in spring, when they will flower in May or June. If the plants are kept in the open ground, instead of being removed to a cold frame, they will not flower till August or September.

3.—CHRYSANTHEMUM ROSEUM, *Adan.* THE ROSE-COLOURED CHRYSANTHEMUM.SYNONYMES.—*Pyrethrum roseum*, *Bieb.* ; Pink *Pyrethrum*.ENGRAVINGS.—*Bot. Reg.* t. 1024.

SPECIFIC CHARACTER.—Leaves glabrous ; pinnatifid and bipinnatifid ; segments acute, diverging. Stem erect, one-flowered ; calyx glabrous.

DESCRIPTION, &c.—This very handsome species is a native of Caucasus, whence it was introduced in 1818. It is quite hardy in British gardens, in which it flowers in May and June. It is propagated by dividing the root. Each plant has numerous stems, every stem bearing a large handsome pink flower ; the leaves are of a rich green, and very finely cut.

4.—CHRYSANTHEMUM SINENSE, Sab. THE CHINESE CHRYSANTHEMUM.

SYNONYMES.—*Anthemis grandiflora*, Ram.; *A. artemisiifolia*, Willd.; *A. stipulacea*, Manch.; *Matricaria japonica*, Brey.; *Matricaria indica*, Mill.; *Kiko no Fanna*, and *Kikokf*, Thun.; and *Kikf* or *Kikku*, Kœmp.

ENGRAVINGS.—Bot. Mag. t. 327, 2042, and 2556; Bot. Reg. t. 4, t. 455, and t. 616; Swt. Brit. Flow. Gard. t. 7 and t. 14; Hort.

Trans., vol. iv., pl. 14; vol. v., pl. 3; and pl. 17* and 17**; and our fig. 1 to 4, in Plate 53.

SPECIFIC CHARACTER.—Stem suffrutescent. Leaves petiolate, ovate, sinuately pinnatifid, villous, three or five-lobed, mucronately dentate. Flowers corymbose.

DESCRIPTION, &c.—The well-known flowers called Chinese Chrysanthemums are described in many catalogues as greenhouse shrubs, but they are hardy perennials for all practical purposes, and as such merit a place in this work. It is true that the stems die down to the ground every autumn, but the roots will survive the severest frosts, and young shoots will appear the following spring. The flowers are never quite so beautiful in the open air as in a greenhouse; but any one who has seen the Chrysanthemums trained against the houses in the suburbs of London, will allow that they are highly deserving of cultivation. Some kinds are much more hardy than others, and will stand the open air much better.

The first account we have of the Chinese Chrysanthemum occurs in a book on the Plants of Malabar, published in 1678; but only one species is mentioned, and a very slight account is given of it. We next find the Chinese Chrysanthemum described by Kœmpfer under the name of *Matricaria*, in his very interesting work on the Plants of Japan, published in 1712. Kœmpfer describes thirteen varieties of the plant, ten of which have been introduced from China; the three which have not reached us are a procumbent plant, with clusters of small, very double, cream-coloured flowers; another a tall plant, with large pale-blue flowers, and the third a plant, growing with a round, compact head, like a dwarf box-tree, and very fragrant, golden-yellow flowers. Instead of these three, others have been introduced, which are not mentioned by Kœmpfer.

In 1753, Linnæus obtained a specimen of the little yellow Chrysanthemum, still called *Chrysanthemum indicum*, the name given to it by Linnæus. This plant was at first supposed to be the parent of all the Chinese Chrysanthemums now in our gardens, but it has been since discovered that they belong to quite a different species, which Mr. Sabine has called *C. sinense*. In 1789, the purple Chinese Chrysanthemum, now called the Old Purple, was introduced into France, and this is supposed to have been the first Chinese Chrysanthemum that flowered in Europe. It was sent to England in 1790. It is true that a plant, under the name of *Matricaria indica*, flowered in the Chelsea Botanic Garden in 1764; but from the description given of it in Miller's Dictionary it appears not to have been a Chrysanthemum. The old white, or changeable white, was a sport from the old purple. This white is still common in our gardens, where it is frequently called the Changeable Chrysanthemum, from its flowers varying very much in different situations. Where the climate is cold, or the situation very open, the florets are generally a pure white; but where they have less air, the backs of the inner florets, and sometimes the whole of the outer florets, are of a pale purple; occasionally in gardens each floret is striped purple and white, and hence the plant is sometimes called the Magpie Chrysanthemum; and lastly, in a south border near the wall, the centre floret is often purple, and the outer florets white. This variety is supposed to have originated in 1802, in the garden of the Bishop of London at Fulham. The first quilled Chrysanthemum was the early white (see fig. 3, plate 53). The flower is nodding, and looks like a close tassel; the florets are perfectly tubular, and rather long, though of an unequal length. This variety was introduced from China in September 1803, and first flowered in the garden of Sir Abraham Hume. The flowers appear early, and when

they first open have a pale yellow cast ; and sometimes, when the weather is cold, they take a tinge of purple on the outside before they fade.

For many years after the Chrysanthemum became a favourite garden flower, we had no varieties but those that had been introduced from China, with the exception of the changeable white ; but about 1820, some seedlings were introduced from France. Still no seed ripened in this country till 1832, when a Mr. Wheeler, a nurseryman at Oxford, was so fortunate as to obtain some, from which he reared several beautiful seedlings ; since then others have been raised at Jersey, which are so much handsomer than the original Chinese varieties, that the latter are almost thrown out of cultivation. About 4000 Jersey varieties are now grown by the different nurserymen and seedsmen, and of course it is impossible to give a list of their names ; but in 1833 Mr. Haworth published a list of Chrysanthemums in the Gardeners' Magazine, in which he attempted to class all the kinds in the following seven divisions :—1. Ranunculus-flowered ; 2. Incurved or cup-shaped ; 3. China aster-flowered ; 4. Marigold-flowered, with flat florets ; 5. Clustered ; 6. Tasselled ; 7. Quilled. It is, however, very difficult to place the numerous new varieties in any of these divisions. As a general remark, it may be observed that the old Chinese kinds are generally the best for flowering in the open air ; and that perhaps the hardest are the tasselled yellow, the superb-clustered yellow, the quilled white, the incurved pink, the old purple, and the Spanish brown. The paper-white also, in some situations, flowers well in the open air. All these flower in November, and are consequently less liable to be injured by frost than the Jersey varieties, many of which remain in flower in a greenhouse till the middle of January.

The culture of the Chrysanthemum is, generally speaking, very simple ; the plants may be propagated in March, April, and May ; the suckers should be separated from the parent plant, each with a portion of the root attached, and put into flower-pots, three or four in a pot or separately, in a loamy soil. No other care is requisite, but to keep the suckers moist, taking care that the pot was well drained with broken crocks at the bottom. As soon as they have rooted, which they will do in a very short time, they should be transplanted into the border of a south wall, against which they may be trained.

The plants should be six inches apart, and only one stem should be allowed to rise, which should be two feet high before it is permitted to branch out. Where a south wall cannot be obtained, those kinds should be chosen which would best bear the privation of a full sun light. The great tasselled yellow and the incurved pink will flourish even on a north wall. The soil should be always loamy, and tolerably rich. In dry weather the plants should be abundantly watered, particularly when the flower-buds are swelling. In many cases liquid manure and soap-suds have been applied with very great advantage to Chrysanthemums in the open air, and the flowers and plants thus treated have been remarkably fine.

5.—CHRYSANTHEMUM INDICUM, *Lin.* THE INDIAN CHRYSANTHEMUM.

ENGRAVING.—Hort. Trans., vol. iv., p. 12, 13.

SPECIFIC CHARACTER.—Leaves tapering to the base, three-lobed, tubed; stem branched, branches one-flowered.

DESCRIPTION, &c.—This plant, which was for a long time confounded with the Chinese Chrysanthemum, was described by Linnæus in 1753, from two dried specimens, one single, and the other double-flowered. It appears evident, however, that the plant described by Linnæus had very small flowers, and was so different from the common Chrysanthemum, that it was judged Linnæus must have had another plant in view, although it was not decided what that plant could be till 1821. In that year, Mr. Sabine, examining a collection of Chinese flowers, of plants belonging to the East India Company, found two, which represented the double and single state of the Chrysanthemum, previously described by Linnæus; and Mr. Sabine, in consequence, gave our common Chrysanthemum the name of *Chrysanthemum sinense*. This Indian Chrysanthemum is a greenhouse plant, and very seldom grown, as its flowers are but small.

6.—CHRYSANTHEMUM TRIPARTITUM.

SYNONYME.—Chrysanthemum indicum, *Pers.*

ENGRAVINGS.—Swt. Brit. Flower Garden, t. 193.

SPECIFIC CHARACTER.—Stem erect; leaves petiolate, three-parted, subcordate at the base. Flowers in terminate corymbose panicles; florets of the ray three-toothed, twice as long as the involucre.

DESCRIPTION, &c.—The leaves of this plant are handsomer than its flowers; it is a hardy perennial, growing about three feet high, and the leaves are of a bluish green. Persoon supposed this to be the plant which Linnæus described under the name of *Chrysanthemum indicum*, but it is evidently quite distinct.

There are some other species of perennial Chrysanthemums, but they are very seldom grown in gardens.

GENUS XXII.

GAILLARDIA, *Willd.* THE GAILLARDIA.*Lin. Syst.* SYNGENESIA FRUSTRANEA.

GENERIC CHARACTER.—Receptacle chaffy, hemispherical. Pappus chaffy, leafy, many-cut. Involucre many-leaved. Florets of the ray divided into tufts.

DESCRIPTION, &c.—The genus Gaillardia is well known for the beauty of its flowers, but most of the species are annuals; the two that are perennials are very short-lived, seldom lasting more than three, or at most four years. Both the perennial species are natives of North America. The name was given in honour of M. Gaillard de Charentonneau, a French botanical amateur.

1.—GAILLARDIA BICOLOR, *Willd.* THE TWO-COLOURED GAILLARDIA.

SYNONYMES.—Gaillardia lanceolata, *Mich.*; *G. pulchella*, *Foug.*; *Calonnea pulchella*, *Buch.*; *Virgilia helioides*, *L'Herit.*

ENGRAVINGS.—Bot. Mag. t. 1602; and our fig. 1, Plate 52.

SPECIFIC CHARACTER.—Stem branching. Stem-leaves lanceolate, slightly toothed. Root-leaves pinnatifid. Chaff of the pappus bristly.

DESCRIPTION, &c.—This plant is very handsome, and has fragrant flowers; it is extremely showy, and well deserving of cultivation. It is a native of the Carolinas and Florida. It flowers from May to July. It was introduced in 1787.

2.—GAILLARDIA ARISTATA, *Pursh.* THE BRISTLY GAILLARDIA.SYNONYME.—*G. bicolor, var., Nut.*ENGRAVINGS.—*Bot. Mag.* 2940; *Bot. Reg.* 1186; and our *fig. 2*,
Plate 52.SPECIFIC CHARACTER.—The whole plant pubescently hirsute.
Leaves oblong, lower ones sinuately pinnatifid, attenuated towards the
petiole; upper ones sessile, entire. Florets of the ray one colour.

DESCRIPTION, &c.—A tall branching plant, with hairy leaves and stem. The leaves are four or six inches long, and of a bluish green, and the flowers are large and very showy. It grows abundantly in dry soils, in California, and along the whole of the west coast of North America, whence it was introduced in 1812. It is quite hardy, and will grow in almost any soil and situation. It is propagated by seeds, the plants from which vary considerably in size, some being not more than eight or ten inches high, while others in the same border reach the height of 3 or 4 feet.

GENUS XXIII.

CINERARIA, *Lin.* THE CINERARIA.*Lin. Syst.* SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Involucre deeply cut into many parts; segments nearly equal, receptacle naked. Florets of the disk tubular, hermaphrodite; florets of the ray ligulate, feminine. Anthers naked at the base. Pappus hairy, sessile.

DESCRIPTION, &c.—*Cineraria* is one of those genera which has been completely cut up by modern botanists, and its species so distributed among other genera that very few have been left under their original name. Thus the beautiful greenhouse plants, that are called *Cineraria* even in English, are no longer included in that genus by botanists, but have been removed to *Senecio*. Many of the hardy species have shared the same fate, and others have been removed to many new genera formed to receive them. The name of *Cineraria* itself seems extremely ill applied to a genus which contains so many splendid flowers, as it signifies ashes; but it alludes to the powdery appearance of the leaves.

1.—CINERARIA AURANTIACA, *Willd.* THE ORANGE-COLOURED CINERARIA.SYNONYME.—*Senecio aurantiaca, Dec.*ENGRAVINGS.—*Sweet's Brit. Flower Gard.*, t. 256; and our *fig. 2*,
in Plate 54.SPECIFIC CHARACTER.—Stems simple. Leaves and stem woolly.
Radical leaves elliptic, repandly dentate, decurrent. Stem-leaves lanceolate, entire. Corymb few-flowered, involucre leafy.

DESCRIPTION, &c.—The whole of this plant, except the flowers, is covered with long white wool, which appears as if laid on in flakes. The stem grows from one to two feet high, and is quite erect. The leaves are various in their form, but all are of a bluish green. The flowers are of a singular appearance, from their varying in colour considerably in the same corymb. Some are of a bright orange-brown, with a reddish tinge; others are bright orange; others golden-yellow; and others of a paler but still brilliant yellow, all of them being sweet-scented. The plant is a native of the Alps of Switzerland, and is very liable to rot in winter, unless planted in a very dry, sandy soil. It does very well on rock-work, if grown in very poor soil, to prevent it becoming too large; but the flowers of the plants grown on rock-work are neither so large nor so numerous as those of plants grown in the open garden. It was introduced about 1818.

2.—CINERARIA SPECIOSA, *Lindl.* THE SHOWY CINERARIA.ENGRAVINGS.—Bot. Reg. t. 812; and our *fig.* 1, in Plate 54.SPECIFIC CHARACTER.—Racemes simple. Leaves kidney-shaped, in the middle of the peduncle. Flowers radiate; florets of the ray sometimes three-toothed.
crenate. Petiole inflated. Stem furnished with simple leaves; bracts

DESCRIPTION, &c.—This species is a hardy herbaceous plant, a native of Siberia; but it is distinguished from the species usually called the Siberian Cineraria by its kidney-shaped leaves; whereas those of the other plant are oblong and cordate. There are other differences, but this distinction is the most easily observed. The plant will grow in any soil or situation; and the flowers are of a golden-yellow and very showy. It was introduced in 1818. De Candolle has formed a new genus for this plant and some others, which he has called *Ligularia*, from the tongue-like shape of the ray florets.

3.—CINERARIA SIBERICA, *Waldst. et Kit.* THE SIBERIAN CINERARIA.

ENGRAVING.—Bot. Mag. 1869.

SPECIFIC CHARACTER.—Racemes simple. Lower leaves cordate, obtusely denticulate, smooth. Stem-leaves entire, lanceolate.

DESCRIPTION, &c.—A hardy perennial, frequently growing three feet high, with one simple undivided stem, which is curiously fluted. The flowers are much smaller than those of the preceding species, and are of a more dingy colour. The plant is quite hardy, and will grow in any soil or situation; but it is only suitable for a shrubby. It is a native of Siberia, and was introduced in 1784.

There are some other species of *Cineraria* with yellow flowers, and one (*C. viscosa*) with white flowers; but they are seldom seen in British gardens.

GENUS XXIV.

SENECIO, *Lin.* THE GROUNDSEL, OR RAGWORT.*Lin. Syst.* SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Flowers radiate, florets of the ray ligulate and feminine. Involucre simple, sometimes almost monophyllous; erect, conical, with calycine scales at the base. Pappus hairy.

DESCRIPTION, &c.—The genus *Senecio* contains a great variety of plants, very different in their appearance, and in the estimation in which they are held. The common groundsel (*Senecio vulgaris*) is well known as a most troublesome weed in gardens; and the yellow ragwort (*Senecio jacobæa*), though much more showy and brilliant in its appearance, is equally annoying to farmers, particularly in Scotland. The purple Jacobæa (*Senecio elegans*) is a well-known garden annual, of great beauty; and the shrubby Cinerarias, which are now included in the genus *Senecio*, are among our most cheerful-looking and useful greenhouse plants. The name *Senecio* is derived from *Senex* (old), and it alludes to the hoary appearance of the leaves.

1.—SENECIO SPECIOSUS, *Willd.* THE SHOWY SENECIO.ENGRAVINGS.—Bot. Reg. t. 41; and our *fig.* 3, in Plate 54.

SPECIFIC CHARACTER.—Flowers radiate. Stems simple, naked. Radical leaves petiolate, oblong, sinuately pinnatifid.

DESCRIPTION, &c.—This very handsome species, though frequently kept in the greenhouse, will grow well and flower freely in the open air. The foliage has an unpleasant smell, like that of the dead nettle; but the flowers



1 *Cineraria speciosa* — 2 *Cineraria aurantiaca* — 3 *Torrey speciosus*
 4 *Doronicum caucasicum* — 5 *Arica montana*

are slightly fragrant ; the stem grows from one foot to two feet high. It was supposed at first to be a native of China, but it is now said to be from Siberia. It was introduced in 1789. It is generally propagated by dividing the roots.

2.—*SENECIO VENUSTUS Willd.* THE HANDSOME *SENECIO*.

ENGRAVING.—Bot. Reg. t. 901.

SPECIFIC CHARACTER.—Flowers radiant. The whole plant glabrous. Leaves pinnatifid ; segments linear, acute.

DESCRIPTION, &c.—This very handsome species, though generally called a perennial, seldom lives more than three or four years, and frequently dies as soon as it has flowered, and ripened its seed. It is nearly related to the purple *Jacobæa* of the gardens, but the leaves are much more finely cut. It is a native of the Cape of Good Hope, whence it was introduced in 1774.

3.—*SENECIO AMPULLACEUS, Lindl.* THE FLASK-FLOWERED AMERICAN GROUNDSEL.

ENGRAVING.—Bot. Reg. t. 3487.

SPECIFIC CHARACTER.—Herbaceous, erect, very smooth, striated. Leaves oblong, obtuse, fleshy, somewhat stem-clasping at the base.

Panicle of flowers corymbose. Involucre flask-shaped, naked. Flowers of the ray few, spreading. Achenium cylindrical, attenuated towards the apex, furnished with a long, silky-pubescent pappus.

DESCRIPTION, &c.—A very handsome plant, with showy golden-yellow flowers ; the leaves are peculiarly thick and fleshy, with a pinkish midrib ; the stem is also pinkish. The seeds are easily known by the abundance of their white silky pappus. There are many other handsome species of *Senecio*, but they are generally too tender to be grown in the open ground without great care.

GENUS XXV.

ARNICA, Lin. THE ARNICA.

Lin. Syst. SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Receptacle naked. Pappus simple. Scales of the involucre equal. Florets of the ray narrow, spreading ; many times longer than those of the disk.

DESCRIPTION, &c.—The plants contained in the genus *Arnica* were separated by Linnæus from *Doronicum*, or Leopard's-bane. The word *Arnica* is said to be derived from a Greek word, signifying a lamb's skin, in allusion to the woolliness of the leaves.

1.—*ARNICA MONTANA, Lin.* THE MOUNTAIN ARNICA.

SYNONYMS.—*Doronicum oppositifolium, Lam.* ; *Caltha alpina, Tab.* ; *Piarnica montana, Dal.* ; *Chrysanthemum latifolium, Dod.*

ENGRAVINGS.—Bot. Mag. 1749 ; and our fig. 5, in Plate 54.

SPECIFIC CHARACTER.—Leaves ovate, entire, opposite. Branches of the stem opposite.

DESCRIPTION, &c.—This is a very showy plant, which, if grown in a moist, shady situation, will attain a large size, and produce great abundance of its brilliant yellow flowers. It was formerly in high repute for its medicinal properties ; and, as it is said to clear the head by exciting sneezing when reduced to powder, it was called Mountain Snuff. It is now seldom grown, though it would be a very useful plant for shrubberies. It is a native of Germany, and other parts of middle Europe, whence it was introduced in 1731.

There are several other species of *Arnica*, all of which are hardy perennials, but they are seldom grown in gardens.

GENUS XXVI.

DORONICUM, *Lin.* THE LEOPARD'S-BANE.*Lin. Syst.* SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Receptacle naked, pappus simple; scales of the involucre in two rows, equal, longer than the disk; seeds of the ray florets destitute of pappus.

DESCRIPTION, &c.—These are very showy flowers, some of which are natives of England, and all of which have been found in Europe, and the North of Asia. Some derive the name of *Doronicum* from an Arabic word signifying poison; but others trace its origin from two Greek words, signifying a gift and a victory; because wild beasts, particularly leopards, are said to be very fond of its leaves and fleshy root, the juice of which has a stupifying effect upon them, and thus makes them fall an easy prey to their enemies. Hence also the English name of Leopard's-bane.

1.—DORONICUM PLANTAGINEUM, *Borr.* THE GREATER LEOPARD'S-BANE.

ENGRAVINGS.—Eng. Bot. t. 630; 2d ed. t. 1169.

SPECIFIC CHARACTER.—Leaves toothed, radical ones on naked stalks, | ovate, or slightly cordate; stem-leaves sessile, except the lowest, which has a winged stalk.

DESCRIPTION, &c.—One of the most showy of British wild flowers, and frequently cultivated in gardens, where its large yellow blossoms produce a brilliant appearance in May and June. It is often confounded with the Common Leopard's-bane; but modern botanists make it a distinct species, and it is certain that its flowers are not only much larger, but are produced much earlier. It is propagated by seeds and dividing the root.

2.—DORONICUM PARDALIANCHES, *Smith.* THE COMMON LEOPARD'S-BANE.

ENGRAVINGS.—Eng. Bot. supp. 2654; 2nd edit. 1169*.

SPECIFIC CHARACTER.—Leaves cordate, toothed; the lower ones on long naked petioles; the intermediate leaves on winged petioles, dilated | into stem-clasping auricles at the base. The uppermost leaves are sessile and stem-clasping.

DESCRIPTION, &c.—The flowers of this plant are much smaller than those of the preceding species, and they do not appear till the latter end of June. The leaves are soft and hairy on both sides, and the whole plant is somewhat clammy to the touch. The roots are fleshy, and form at intervals small tubers about the size of a bean, from each of which a flowering stem proceeds, and grows to the height of two or three feet. From this peculiarity it is very difficult to eradicate the plant when once it has been introduced into a garden; and, at the same time, it is impossible for any plant to be more easy to propagate, as all that is required is to separate one of the flowering stems with its attached tuber from the rest, and to transplant it into another place. It also ripens seeds freely. It is said to grow best in damp shady places, but it generally succeeds in any soil or situation.

3.—DORONICUM CAUCASICUM, *Bieb.* THE CAUCASIAN LEOPARD'S-BANE.

ENGRAVINGS.—Bot. Mag. t. 1343; and our *fig.* 4, in Plate 54.

SPECIFIC CHARACTER.—Leaves cordate, dentate; radical leaves on long petioles; stem-leaves sessile, and stem-clasping.

DESCRIPTION, &c.—The flowers of this plant are rather small, but very pretty; the root is an oblong creeping tuber, or rhizoma; the stems grow about a foot high; and the leaves are small and quite heart-shaped. The plant is a native of Mount Caucasus, whence it was introduced in 1815. It is quite hardy in British gardens, and flowers in April.

There are few other species of *Doronicum*, all with yellow flowers, but they are seldom seen in British gardens.

GENUS XXVII.
GRINDELIA, *Kunth.* THE GRINDELIA.

Lin. Syst. SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Involucre with numerous imbricated scales; of the ray ligulate, feminine. Anthers, naked at the base. Achenium receptacle naked. Flowers of the disk tubular, hermaphrodite; those obliquely ovate, pappus bristly, deciduous.

DESCRIPTION, &c.—This genus of very handsome flowers was originally called *Donia*, in honour of Mr. Don, the curator of the Botanic Garden at Edinburgh; but it was united by Mr. Brown to the genus Grindelia, which had previously been established and named in honour of a German botanist named Grindel. The first species, named *Donia glutinosa*, is a greenhouse half-shrubby plant; but most of the other species are hardy perennials, which flower freely in the open air. Most of the species were formerly included in the genus *Doronicum*.

1.—GRINDELIA INULOIDES, *Lindl.* THE INULA-LIKE GRINDELIA.

SYNONYME.—*Aster spathularis*, *Brouss.*

ENGRAVINGS.—Bot. Reg. t. 248; and our *fig. 1* in Plate 55.

SPECIFIC CHARACTER.—Leaves oblong, and sometimes fiddle-shaped,

deeply serrated. Stem and leaves both pubescent; pappus simple, and consisting of two or more fine bristles.

DESCRIPTION, &c.—This very showy plant is not half so much cultivated as it deserves to be, from an idea that it requires a greenhouse to bring it to perfection. It is true it is better if slightly protected during the winter, by putting a little straw over the roots, or turning a flower-pot over them during severe weather; but, under favourable circumstances, it flowers better in the open air than in a greenhouse. The flowers are yellow, the florets of the ray rolling back as they fade; and the involucre produces a white glutinous juice, which, indeed, is found more or less in all the species of the genus. The stem generally grows about two feet high, and the leaves are rough and hairy. This species is propagated by seeds, cuttings, or division of the root. It is a native of Mexico, and was introduced in 1815.

2.—GRINDELIA ANGUSTIFOLIA, *Kunth.* THE NARROW-LEAVED GRINDELIA.

SYNONYME.—*G. Arguta*, *Dec.*

ENGRAVINGS.—Bot. Reg. 781, t. 29; and our *fig. 2*, in Plate 55.

SPECIFIC CHARACTER.—Stems simple, unbranched. Lower leaves spatulate; upper ones linear, oblong, serrated, very slightly nerved.

DESCRIPTION, &c.—This very handsome species grows in large bushes of single stems, each from three to four feet high, and in the beginning of August it produces its large and showy flowers, which continue till the stems are killed down to the ground by the frost. The plants are quite hardy in the open ground, but they thrive best in a free soil and an open situation. The species is a native of Mexico, and grows on the Table-land at an immense elevation above the level of the sea. It was introduced in 1822. It is propagated by seeds, and by dividing the roots; and it is well deserving of cultivation in any garden where there is plenty of room.

3.—GRINDELIA SQUARROSA, *Dec.* THE SNAKE-HEADED GRINDELIA.

SYNONYME.—*Donia squarrosa*, *Pursh.*

ENGRAVING. Bot. Mag. t. 1706.

SPECIFIC CHARACTER.—Herbaceous. Leaves oblong, stem-clasping, serrated. Scales of the involucre thread-like, and curved backwards.

DESCRIPTION, &c.—This species is a herbaceous perennial, a native of the open meadows on the banks of the Missouri, where it was discovered in August, 1804. The involucre and the back of the flower produce a glutinous liquid, which has a strong resinous smell. It flowers from August to November, and is propagated by seeds or division of the roots.

G. VILLOSA, *Dec.*

Is also a hardy perennial, with yellow flowers and hairy leaves. It is a native of the banks of the Colombia in California, whence it was introduced in 1827.

GENUS XXVIII.

DIPLOCOMA, *D. Don.**Lin. Syst.* SYNGENESIA SUPERFLUA.

GENERIC CHARACTER.—Involucre with many imbricated scales; at the base. Achenium cleft at the apex. Pappus double; the outer receptacle honey-combed and chaffy. Florets of the ray feminine and ligulate; those of the disk hermaphrodite and tubular. Anthers mutic row very short and chaffy, and the inner row long and hairy.

DESCRIPTION, &c.—The two species which compose this genus were separated from *Doronicum* by the late Professor Don, on account of their honeycombed receptacle, double pappus, and hornless anthers. Professor Don called this genus *Diplocoma*, from two Greek words, signifying a double lock of hair, in allusion to the seeds being furnished with a double row of pappus; but Professor De Candolle has changed its name to *Heterotheca*, which signifies a double sheath, though we are not told how it is applied.

1.—DIPLOCOMA VILLOSA, *D. Don.* THE HAIRY DIPLOCOMA.

SYNONYMES.—*Doronicum villosum*, *Sesse. et Moc.*; *Doronicum Mexicadum*, *Cav.*; *Heterotheca inuloides*, *Dec.*
 ENGRAVINGS.—Sweet's Brit. Flower Gard. t. 246.

SPECIFIC CHARACTER.—Leaves alternate, sessile, stem-clasping or petiolate. Flowers on long petioles, subcorymbose.

DESCRIPTION, &c.—A hardy perennial, growing from a foot to eighteen inches high, "branched, and terminating by a loose corymb of flowers, striated with numerous longitudinal stripes, some of which are tinged with purple, and densely clothed with spreading hairs that are unequal in length." The leaves are hairy on both sides, and fringed at the margin; some of them are fiddle-shaped, and others tapering gradually to the point: the stem leaves are sessile, and stem-clasping a little at the base; but the radical leaves are on tolerably long petioles. The whole plant is covered with hair. The species is a native of Mexico, whence it was introduced in 1827. The plants flower during the summer, and ripen abundance of seed. The stems die down to the ground towards the latter end of autumn, and the roots should be slightly protected during very severe frosts.

GENUS XXIX.

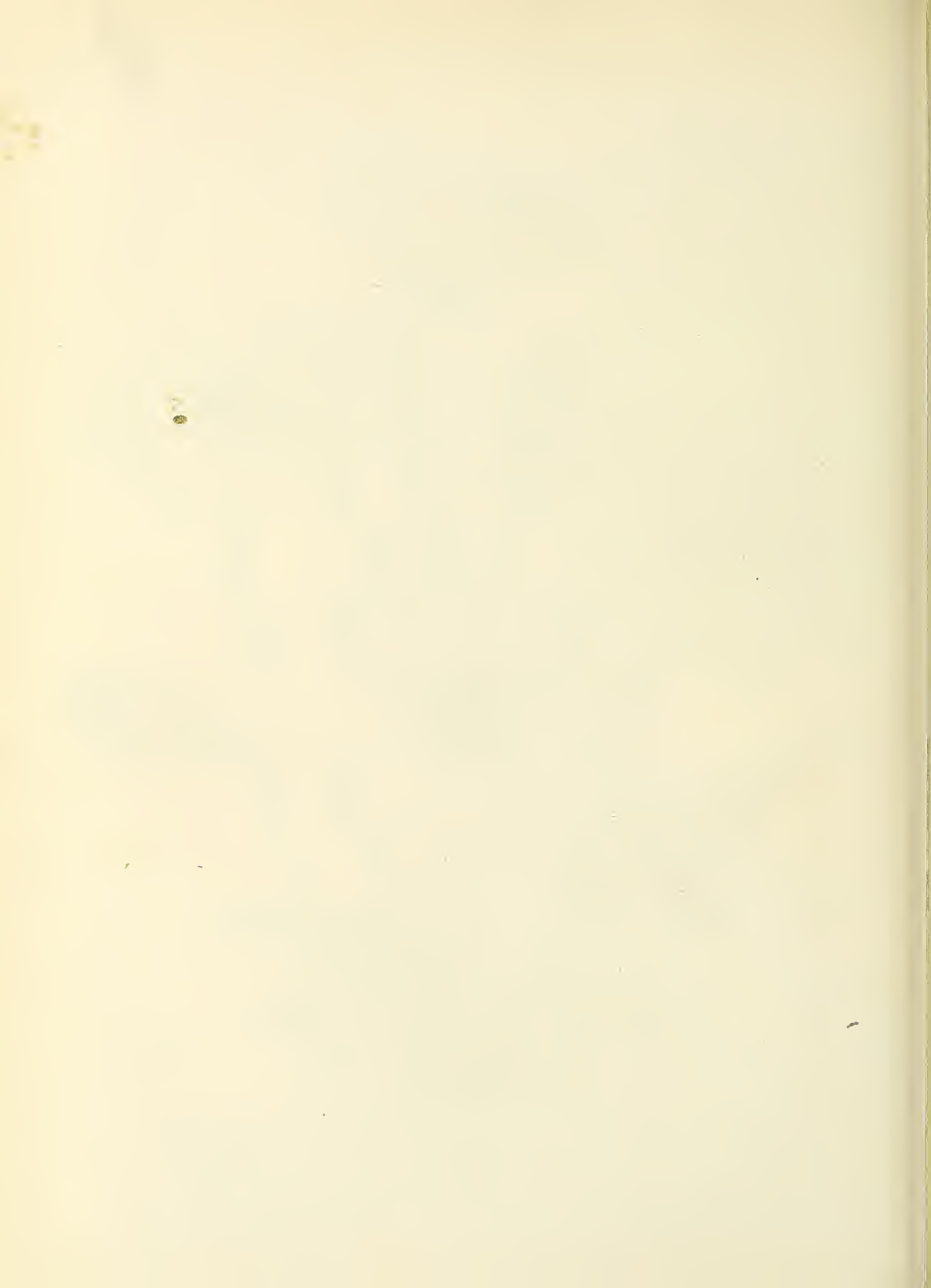
ARCTOTIS, *Lin.* THE ARCTOTIS.*Lin. Syst.* SYNGENESIA POLYGAMIA NECESSARIA.

GENERIC CHARACTER.—Flowers radiate. Receptacle honeycombed, bristly. Seeds doubly furrowed on the back; pappus chaffy. Involucre imbricate; scales rough at the margin.

DESCRIPTION, &c.—The species belonging to this genus are all somewhat tender, though they will flower well in the open air if slightly protected through the winter. They are all remarkable for the size and beauty of their flowers, which are frequently tinged with a kind of reddish orange, which harmonises admirably with green. In situations where it is not convenient to protect the plant during winter, cuttings should be made in the summer, which will strike easily if planted in a border of light earth, and which may be potted in autumn, in



1. *Asteris tricolor*. — 2. *Asteris maculata*. — 3. *Asteris speciosa*. 4. *Gnindolia angustifolia*.



order that they may be protected in a frame during the winter, till they can be planted out in spring; or the cuttings may be struck at once in pots early in autumn, and protected during the winter for planting out in the spring. Plants of this genus do much better with this treatment in the open ground than they do in greenhouses, as in the latter situation old plants are very apt to become mouldy, and the leaves to decay. In the open ground, on the contrary, the plants grow freely and produce abundance of handsome leaves and flowers of good size and brilliant colour. They should all be grown in dry light soil, and supplied with abundance of water during the growing season. All the species are natives of the Cape of Good Hope. The name *Arctotis*, signifies bear's ear, and alludes to the double furrows of the seeds.

1.—*ARCTOTIS ACAULIS*, *Lin.* THE DWARF *ARCTOTIS*.

SYNONYME.—*Arctotis speciosa*, *Jacq.*

ENGRAVING.—*Bot. Reg.* t. 122.

SPECIFIC CHARACTER.—Radical leaves lyrate. Flowers pedunculate.

DESCRIPTION, &c.—A dwarf species, very suitable for growing in boxes, or in the beds of a flower-garden close under the windows of a breakfast parlour, as the plants require a warm sunshiny situation. The flowers have a remarkably gay and brilliant appearance; and they are produced in succession from April to June, or longer. The florets of the ray are yellow and reddish on the outside; and the florets of the disk are of so dark a puce colour as to look almost black. The species is a native of the Cape of Good Hope, whence it was introduced in 1759. It is propagated by dividing the roots.

2.—*ARCTOTIS MACULATA*, *Willd.* THE SPOTTED *ARCTOTIS*.

SYNONYME.—*A. caulescens*, *Thunb.*

SPECIFIC CHARACTER.—Florets of the ray fertile. Stem suffruticose.

ENGRAVINGS.—*Bot. Reg.* t. 130; and our fig. 2 in Plate 55.

Leaves pinnatifidly lyrate, angularly dentate; woolly below.

DESCRIPTION, &c.—A very handsome species with whitish flowers, the tips of the florets of the ray being tinged with orange, and the back of the florets being of the same colour. The leaves are remarkable for their sharp teeth, and the species is easily distinguished from the preceding one by them, as well as by its having a stem. The plant generally grows about two feet and a half high, and it is covered all over with a short white down, which when seen in the sun looks like frosted silver. It is very nearly hardy, but it requires a great deal of water during the summer months to make it flower well. It is generally increased by cuttings, which will strike without any difficulty in the open ground. It is supposed to be a native of the Cape, but the year of its introduction is not known; and some florists appear to think that it may have been originated in this country from the seed of *A. aspera*. It is very nearly hardy, and only requires protection during hard frosts. It should be grown in a light, somewhat sandy soil, and open situation.

3.—*ARCTOTIS ASPERA*, *Lin.* THE ROUGH-LEAVED *ARCTOTIS*.

SYNONYME.—*A. arborescens*, *Jacq.*

ENGRAVING.—*Bot. Reg.* t. 34.

SPECIFIC CHARACTER.—Suffruticose. Leaves indented, or deeply

pinnatifid; the upper ones somewhat covebbed; the lower ones rough and hairy, or villose. Appendages to the scales of the involucre revolute and hairy.

DESCRIPTION, &c.—This very handsome plant is rather too shrubby for the present work; but I have mentioned it as it has been supposed to be the parent of the preceding species, which is a true perennial. The flowers are white, with a yellow centre and a pink back, and they have a slightly bitter smell. The following

passage from the *Botanical Register*, relating to this flower, may be amusing to such of my readers as have a taste for botany, as it applies more or less to all the species of the genus.

"On a bright warm day, under the shelter of a greenhouse, the stigmas of the various florets may be perceived to emerge from within the tube of the concealed anthers, carrying up the pollen parted with to them by those organs, and which is seen to adhere in a thick coat of yellow powder, to afford it from this new position the means of an access necessary to the otherwise unprovided stigmas of the surrounding ray, a task to which the proper organ is evidently here incompetent. By and by the same are seen to retreat gradually within the cavity of the now empty anthers. When recently emerged and charged with pollen, they bend and incline themselves with a lively motion on the slightest touch, but always in the direction whence the impulse came; and in so doing necessarily part with a portion of the pollen that covers them. And as the honeyed liquid which attracts the insect to the flower is deposited in the ray that surrounds the disk, the impulse will be the more certainly given by that means, probably the only one, from the side towards which it is requisite that the pollen should be carried. The style, by the extension and contraction of which the stigma is made to advance and withdraw, seems to consist of a substance resembling elastic gum (caoutchouc), and may be repeatedly drawn out to a considerable extent, like that contracting to its former dimensions when left to itself, with the same elastic force."

The species is a native of the Cape of Good Hope, and was introduced in 1710.

A. AUREOLA, *Lin.*

Closely resembles the above species, excepting the colour of its flowers, which are of a brilliant reddish orange.

4.—ARCTOTIS TRICOLOR, *Jacq.* THE THREE-COLOURED ARCTOTIS.

ENGRAVINGS.—Bot. Reg. t. 131; and our *fig. 1*, in Plate 55.

SPECIFIC CHARACTER.—Stemless. Leaves lyrate, spreading; upper surface slightly hairy, lower one tomentose. Scales of the involucre linear, sometimes club-shaped; covered with white tomentum, with a recurved mucro at the tip.

DESCRIPTION, &c.—This is a dwarf species, remarkable for the beauty of its flowers (which are white, and dark purple on the under side,) and for its leaves, the veins of which are strongly marked on both sides, and whitish. The disk of the flower is of a deep shining blackish brown. The plant has no stem, but the peduncles of the flowers are from six inches to a foot high. It is a native of the Cape, whence it was introduced in 1794. It should be planted in a mixture of peat and loam, and it is easily propagated by suckers. It flowers from May to July.

5.—ARCTOTIS SPECIOSA, *Willd.* THE SNOWY ARCTOTIS.

SYNONYME.—*A. breviscapa*, *Thunb.*

ENGRAVINGS.—Bot. Mag. t. 2182; and our *fig. 3*, in Plate 55.

SPECIFIC CHARACTER.—Stemless. Leaves lyrate pinnatifid; ca-

nescent on the lower surface, three-nerved. Scape cylindrical, striated.

Scales of the involucre linear, recurved.

DESCRIPTION, &c.—This species appears to be a biennial, or at most not lasting longer than three years. It requires scarcely any protection during winter. It is propagated by seeds, which it ripens freely. It is supposed to be a native of the Cape, but the year of its introduction is not known, and some think it a seedling variety of the *A. acaulis*. It will grow in almost any soil and situation.



1. *Gazania pavonia*. — 2. *Gazania regens*. — 3. *Gazania uniflora*.

GENUS XXX.

GAZANIA, *R. Brown.* THE GAZANIA.*Lin. Syst.* SYNGENESIA POLYGAMIA FRUSTRANEA.

GENERIC CHARACTER.—Flowers radiate. Receptacle naked, or honey-combed. Seeds very hairy; pappus chaffy. Involucre tubular at the base, with the limb divided into numerous imbricate segments.

DESCRIPTION, &c.—The very handsome plants which compose this genus are, like the preceding kinds, only half hardy; but when treated in the same manner they may be grown easily in the open air, and certainly are splendid additions to a flower-garden. Their flowers are generally of a reddish orange. The word *Gazania* signifies treasure, in allusion to the splendour of the flowers.

1.—GAZANIA PAVONIA, *R. Brown.* THE PEACOCK GAZANIA.

SYNONYMS.—*Gorteria pavonia*, *And.*; *Hazel-ringed Gazania*.

ENGRAVINGS.—*Bot. Reg.* t. 35; *Bot. Rep.* t. 523; and our *fig. 1*, in Plate 56.

SPECIFIC CHARACTER.—Leaves pinnatifid, hairy above and woolly below; segments oval-lanceolate. Scape one-flowered. Stem decumbent.

DESCRIPTION, &c.—This splendid plant only expands its flowers in broad daylight; but as soon as the sun withdraws its light, each of the florets of the ray rolls itself upwards towards the middle, and remains in this state till it expands again the following morning as soon as the sun appears. It is sometimes considered as a biennial, but it will live three or four years, and it is increased by dividing the root-stock. It should be grown in light dry soil, and plentifully supplied with water. It is a native of the Cape, whence it was introduced in 1804.

2.—GAZANIA RIGENS, *R. Brown.* THE STIFF-LEAVED GAZANIA.

SYNONYME.—*Gorteria rigens*, *Linn.*

ENGRAVINGS.—*Bot. Mag.* t. 90; and our *fig. 2*, in Plate 56.

SPECIFIC CHARACTER.—Leaves lanceolately pinnatifid. Stem depressed. Scape one-flowered.

DESCRIPTION, &c.—This very handsome plant has the same peculiarity of rolling up its ray florets when the sun withdraws its light, as the preceding species; but when they are expanded, they are uncommonly brilliant, from their large size and the singularity of their colour, which is of a deep orange-red. The flowers appear in June, and contrast strongly with the leaves, which are of a dark green above, and a silvery white below; they are also remarkably rigid. The plant is only a short-lived perennial, and it is propagated by cuttings, as it seldom ripens its seed in this country. It requires protection during winter. It is a native of the Cape, and was introduced in 1755.

3.—GAZANIA UNIFLORA, *Sims.* THE GOLDEN-FLOWERED GAZANIA.

SYNONYME.—*Gorteria uniflora*, *Thunb.*

ENGRAVINGS.—*Bot. Reg.* t. 2270, and our *fig. 3*, in Plate 56.

SPECIFIC CHARACTER.—Stem suffrutescent, decumbent. Leaves spatulate-lanceolate, tomentose below. Involucre smooth. Flowers one-coloured.

DESCRIPTION, &c.—This is a very pretty little plant, with golden yellow flowers, which are extremely unlike all the other species of the genus, as the disk is the same colour as the ray. The leaves, however, bear considerable resemblance to those of the last species. It is a native of the Cape of Good Hope, where it is found near the sea-coast, and whence it was introduced in 1816. It flowers in July and August, and is propagated by cuttings.

G. SUBULATA, *Lin.*

This species has yellow flowers like those of *G. uniflora*, and awl-shaped leaves. It is a native of the Cape, whence it was introduced in 1792, and it requires the same culture as the other species of the genus.

G. HETEROPHYLLA, *Willd.*

The flowers of this species resemble those of *G. rigens*, and the leaves are of the same kind, but vary more in form. The species is a native of the Cape, whence it was introduced in 1812.

GENUS XXXI.

ECHINOPS, *Juss.* THE GLOBE THISTLE.*Lin. Syst.* SYNGENESIA SEGREGATA.

GENERIC CHARACTER.—Involucre wanting. Florets hermaphrodite, all tubular. Receptacle bristly. Pappus obsolete.

DESCRIPTION, &c.—The name of Echinops is taken from two Greek words, which signify literally “like a hedgehog;” and the name is certainly very appropriate to the heads of the Globe Thistle, which look like a hedgehog curled up. The species are all natives of cold countries, and consequently they are all hardy in British gardens; they are, however, seldom cultivated, on account of the great space they take up, though in a shrubbery or any other place where there is room, their broad, luxuriant-looking leaves have a handsome and even a noble appearance.

1.—ECHINOPS STRICTUS, *Sims.* THE UPRIGHT GLOBE THISTLE.

SYNONYMES.—*E. exaltatus*, *Dec.*; *E. Ritro*, *Schk.*

ENGRAVINGS.—*Bot. Mag.* t. 2457.

SPECIFIC CHARACTER.—Stems simple, upright, one-flowered. Leaves crosely pinnatifid, spinously dentate; upper part glabrous, under part tomentose.

DESCRIPTION, &c.—The stem of this plant grows three or four feet high, quite erect, and without any branches. The leaves are alternate, and half stem-clasping; they are unevenly pinnatifid, and irregularly toothed. The florets are tubular, with a spreading limb; the tube being white, and the limb of a brilliant blue. The anthers are first blue, but afterwards become brown, and the stigmas are of a very dark blue. The contrast of these colours makes the upright globe thistle as handsome as any plant of the genus can possibly be; but the long, stiff, naked stem, and ball-like heads of flowers, will prevent any of the species from ever becoming favourites in the flower-garden. The species is a native of Russia, whence it was introduced in 1822; and, as it is only a biennial, it is propagated by seeds.

2.—ECHINOPS RITRO, *Lin.* THE SMALL GLOBE THISTLE.

ENGRAVINGS.—*Bot. Mag.* t. 932.

SPECIFIC CHARACTER.—Flower-head globose. Leaves pinnatifid, glabrous above, and tomentose beneath, spiny.

DESCRIPTION, &c.—This very pretty little species is still more decidedly blue than the preceding one; as the calyx to each separate flower is blue also. The stem of the flower and the under side of the leaves are quite white, being clothed with a silvery tomentum. The margin of the leaves is armed with strong spines. The stem is quite short and branched. The species is a native of Siberia, whence it was introduced about 1570; it is also found occasionally in the south of Europe. It is quite hardy, and it is easily propagated, either by dividing its creeping roots, or by seeds. It is a true perennial, and when once planted will last a great many years without any particular care being taken of it.

3.—ECHINOPS PANICULATUS, Jacq. THE TARTARIAN GLOBE THISTLE.

SYNONYME.—*E. tauricus*, Willd.

ENGRAVING.—Bot. Reg. t. 356.

SPECIFIC CHARACTER.—Leaves very rough, broadly pinnatifid, glabrous above, and slightly tomentose below. Stem branching.

DESCRIPTION, &c.—The flowers of this plant have no beauty to recommend them, but the stems grow six feet high, with large broad leaves, often a foot and a half long, which have a magnificent appearance in a shrubbery. This species is well adapted for planting in those situations where it is advisable to hide the dug ground of a shrubbery, as its leaves are very large, and the lower ones grow close to the ground. It is quite hardy; but, as it is only a biennial, it requires propagating every season by seeds. It is a native both of Spain and Siberia, and it was introduced in 1815 from the latter country.

E. PLATYLEPIS, Dec.

A blue-flowered, dwarf plant, with very broad scales to the involucre. It does not flower till September and October. Its native country and year of introduction are not known.

E. HUMILIS, Dec.

A dwarf plant, the stems and leaves of which are covered with a white tomentum. The flowers are blue, and they are produced from June till August. The species is a native of Siberia, whence it was introduced in 1826.

E. DAHURICUS, Dec.

This species has blue flowers. It is a native of Mount Caucasus, whence it was introduced in 1827. There is a variety with narrow-lobed leaves.

E. SPHEROCEPHALUS, Dec.

An Austrian species, with very large heads of white florets. A native of Russia, introduced in 1819.

E. BANNATICUS, Dec.

A native of Hungary, introduced in 1828.

E. PERSICUS, Dec.

A native of Persia, introduced in 1821. Florets white.

E. SPINOSUS, Lin.

A native of Egypt, introduced before 1597, with spines in the head of florets. The flowers are white, and the English name of the species is "thorny-headed."

E. HORRIDUS, Dec.

Closely resembling the preceding species; but a native of Persia, introduced in 1817.

E. LANUGINOSUS, Willd.; *E. GRÆCUS*, Dec.

A native of the Levant, with blue flowers. The whole plant is covered with a woolly tomentum. It is a native of the Levant whence it was introduced in 1736.

GENUS XXXII.

CENTAUREA, *Lin.* THE CENTAURY*Lin. Syst.* SYNGENESIA POLYGAMIA ÆQUALIS.

GENERIC CHARACTER.—Filaments papillose. Pappus in several rows. Seeds compressed, somewhat honeycombed on the sides. Florets five-parted.

DESCRIPTION, &c.—This genus takes its name from the legend that the Centaur Chiron used the juice of one of the species medicinally. The plants are generally hardy perennials, and those which are natives of Britain are called Knapweed. Among the annual species the corn blue-bottle is the best known. The species are not generally very ornamental, but they are quite hardy.

1.—CENTAUREA GLASTIFOLIA, *Lin.* THE WOOD-LEAVED CENTAUREA.ENGRAVING.—*Bot. Mag.* t. 62.

SPECIFIC CHARACTER.—Involucre imbricated. Scales entire. Leaves entire, decurrent.

DESCRIPTION, &c.—This species is remarkable for its leaves, which resemble those of the woad, and have the veins projecting on both sides, like those of the *Gazania*. The scales of the involucre are also remarkable for their silvery appearance. The florets are yellow, but the flowers have no great beauty. The species is a native of Siberia, and also of Persia; it was introduced in 1731.

2.—CENTAUREA BALSAMITA, *Lam.* BALSAM-SCENTED CENTAUREA.

SYNONYMS.—*Carduus orientalis*, *Tourn.*; Costmary-leaved Centaury.

ENGRAVING.—*Swt. Brit. Flower Gard.* 2d series, t. 355.

SPECIFIC CHARACTER.—The whole plant covered with a silky wool.

Stem simple. Root-leaves lyrate; stem-leaves oblong, mucronate, entire. Flower-head ovate; involucre with smooth scales; appendages palmate, pectinate; florets of the ray numerous, slender, shorter than those of the disk, and with a three-parted limb.

DESCRIPTION, &c.—This plant is a hardy perennial, the flowers of which have a balsamic scent. The involucre is globe-shaped, and remarkable for the curious little crest-like appendages, which are stuck all over it. The leaves are large and covered with a silky tomentum. The species is a native of Mount Caucasus, and it was introduced in 1820. It is propagated by dividing the root, and will grow in any ordinary garden soil.

3.—CENTAUREA MONTANA, *Linn.* THE MOUNTAIN CENTAURY.

SYNONYMS.—*Cyanus major*, *Tourn.*; the greater blue-bottle; the large corn-flower.

ENGRAVING.—*Bot. Mag.* t. 77; and our *fig.* 1 in Pl. 57.

SPECIFIC CHARACTER.—Leaves lanceolate, decurrent. Stem simple. Scales of the involucre serrated.

DESCRIPTION, &c.—The corn blue-bottle is so well known a plant that it needs very little description; this, however, is the perennial species, and its flowers are so large and so handsome as to deserve cultivation in any garden. This species is a native of the German Alps, where it remains in flower all the summer; in England it is a hardy perennial, and will grow in any soil and situation. It is propagated by dividing the roots, or by seeds, which it ripens in great abundance. It was introduced before 1596, and thus has been one of the commonest of our garden-flowers for the last two hundred and fifty years.

4.—CENTAUREA OCHROLEUCA, *Willd.* THE CREAM-COLOURED CENTAURY.SYNONYMS.—*Centaurea Caucasica*, *Tourn.*ENGRAVINGS.—*Bot. Mag.* t. 1175; and our *fig.* 3 in Pl. 57.

SPECIFIC CHARACTER.—Scales of the involucre ciliated. Radical

leaves obovate, lanceolate, undulated; stem, leaves decurrent, lanceolate, dentate, undulated.

DESCRIPTION, &c.—The stem, which is angular, grows about a foot and a half high, and it is nearly clothed by the decurrent leaves, which are so near together as to make the stem itself appear winged. The leaves are



1. *Centaurea montana* 2. *Centaurea shaponica* 3. *Centaurea Ochroleuca* 4. *Centaurea Babamita*

not at all handsome, having a coarse weedy appearance; but the flowers are very pretty, as they are large and are of a beautiful pale yellow. The species is a hardy perennial, and easily increased by seeds or parting the root. It is a native of Mount Caucasus, whence it was introduced in 1801. It is nearly allied to the large blue *Centaurea*, but it is distinguished by the undulated leaves, and by long hairs growing from the black margin of the scales of the involucre. It flowers during May, June, and July.

5.—CENTAUREA SPHÆROCEPHALA, *Lin.* THE PRICKLY-HEADED CENTAUREA.

SYNONYMES.—*C. cespitosa*, *Vahl*; *Jacea purpurea*, *Ray*; *J. maritima*, *Barrel*.

SPECIFIC CHARACTER.—Involucre beset with palmate spines. Leaves stem-clasping, hairy, oblong, dentate, lower ones pinnatifid.

ENGRAVINGS.—*Bot. Mag.* t. 255 l.

DESCRIPTION, &c.—This species is by far the handsomest of all the *Centaureas*. The involucre is globe-shaped and studded over with tufts of dark-brown spines. The flowers are of a beautiful purple. It is a native of the south of Europe and the Coast of Barbary, where it grows in large matted tufts on the sand of the sea-shore; but it is quite hardy enough to bear the winter in England without protection. It flowers nearly all the summer; it is propagated either by seeds or dividing the roots. It was introduced in 1683.

6.—CENTAUREA RAGUSINA, *Lin.* THE CRETAN CENTAURY.

SYNONYMES.—*Jacea cretica*, *Mor.*; *J. arborea*, *Zan.*; *Stœbe montana*, *Barrel*.

SPECIFIC CHARACTER.—Involucre ciliated. Leaves covered with a silvery tomentum, pinnatifid; segments obtusely-ovate, upper ones largest.

ENGRAVING.—*Bot. Mag.* t. 494.

DESCRIPTION, &c.—This is a very singular-looking plant, with whitish-blue leaves and bright yellow flowers. It grows about three feet high, and will flower in the open border, though it requires protection during winter. It is a native of Candia and the Ionian Isles, and was introduced in 1714. It appears, however, to have been long lost to our gardens, though it is deserving of cultivation, from the silvery whiteness of its stem and leaves.

7.—CENTAUREA SPINOSA, *Lin.* THE SPINY CENTAURY.

SYNONYMES.—*Jacea cretica*, *Tourm.*; *Stœbe spinosa*, *Bauh.*; *Cyanus spinosus*, *Alp.*

SPECIFIC CHARACTER.—Involucre ciliated. Radical leaves undivided or pinnatifid; stem-leaves tomentose, pinnatifid. Branches spiny.

ENGRAVING.—*Bot. Mag.* t. 2493.

DESCRIPTION, &c.—This is a rare plant, though it was introduced before 1620, and is a native of Candia, the ancient Crete. It is more curious than beautiful, and yet its small delicate flowers may be called pretty. The stem is very much branched, and each of the branches terminates in a short spine, which gives it a shrubby appearance, though it is a true perennial. It grows freely in any light garden soil, but requires a slight protection from frost.

7.—CENTAUREA RHAPONTICA, *Lin.* THE SWISS CENTAURY.

ENGRAVINGS.—*Bot. Mag.* t. 1752; and our *fig. 2* in Pl. 57.

SPECIFIC CHARACTER.—Involucre scaly, with hard loose scales. Leaves ovate-oblong, denticulate, tomentose, below.

DESCRIPTION, &c.—This plant is very large and coarse-growing, with broad deep-green leaves. It has a very thick stem, and a large involucre, with coarse loose brown scales, and a head of purple flowers, which is nearly as large as that of the artichoke. It is only fit for growing in a shrubbery. It is a native of Switzerland, and was introduced in 1640.

C. AUREA, Lin.

A coarse-growing plant, with a large involucre, and a small head of flowers. A native of the South of Europe, whence it was introduced in 1758.

C. MACROCEPHALA, Lin.

Another species, with yellow flowers, and very coarse weedy-looking leaves. It is a native of Mount Caucasus, whence it was introduced in 1755.

There are numerous other species, but they are seldom seen in British gardens; and those above enumerated are decidedly the most ornamental.

GENUS XXXIII.

CNICUS, *Lin.* THE HORSE-THISTLE.

Lin. Syst. SYNGENESIA ÆQUALIS.

GENERIC CHARACTER.—Involucre ventricose, imbricate; scales spiny, surrounded by large bracts. Florets of the disk and ray equal.

DESCRIPTION, &c.—The genus *Cnicus* was established by Linnæus, and originally contained nearly all the ornamental Thistles; it is now, however, reduced to one plant, the Blessed Thistle, which singularly enough was not placed in it by Linnæus. The plants formerly included in the genus have been called by numerous names; and in De Candolle's *Prodromus*, the greater part of them are placed in the genus *Circium*. I have, however, preferred retaining the Linnæan name as being that which is best known; and I have given only one species, as it is the only one I believe that is cultivated in the gardens. The name of *Cnicus* was that anciently applied to the Thistle by Dioscorides.

1.—CNICUS SPINOSISSIMUS, *Lin.* THE FEATHER-HEADED HORSE THISTLE.

SYNONYMS.—*Cardus spinosissimus, Lam.*; *Circium spinosissimus, Scop.*; *Carlina alba, Bauh.*

ENGRAVING.—*Bot. Mag.* t. 1366.

SPECIFIC CHARACTER.—Leaves stem-clasping, sinuately pinnatifid, spiny. Flowers sessile.

DESCRIPTION, &c.—This plant, though it possesses no beauty in its flowers, is extremely ornamental in a garden, from its feathery white bracts, which contrast strongly with its bright-purple stems, and dark-green spiny leaves. It is a native of the Alps of Southern Europe, whence it was introduced in 1759. When cultivated in gardens, it should be grown in a light sandy soil, and in an open situation. I have seen it presenting a magnificent appearance in many gardens of Scotland, where it had plenty of room; but in small gardens in London and the suburbs, it looks so badly, that no one would suppose it to be the same plant.

2.—CNICUS AFER, *Willd.* THE BARBARY, OR TWIN-THORNED, THISTLE.

SYNONYMS.—*Cardus afer, Jacq.*; *C. diacantha, Labil.*; *Chamaepeuce afera, Dec.*

ENGRAVINGS.—*Bot. Mag.* t. 2287.

SPECIFIC CHARACTER.—Leaves sessile, lanceolate, tomentose beneath, spreading, lobes emarginate, two-spined. Flowers pedunculate, sub-corymbose. Scales of the involucre lanceolate, spinous, widely-spreading.

DESCRIPTION, &c.—This is an exceedingly handsome thistle, with long purple flowers rising up in the centre of the widely spreading starlike spines of the involucre. The leaves are studded with spines, which grow two or three together, spreading out like those of the Berberry. The species is a native of Barbary, whence it

was introduced in 1800. It is a biennial, and is very ornamental, from the great number and bright colour of its flowers. The receptacle is thickly covered with soft white hairs, among which the seeds, each crowned with a feathery pappus, are imbedded.

GENUS XXXIV.

ERYTHROLÆNA, *D. Don.* THE SCARLET THISTLE.

Lin. Syst. SYNGENESIA ÆQUALIS.

GENERIC CHARACTER.—Involucre conical. Scales numerous; inner one imbricated, entire; outer ones reflexed, and spinously dentate. Receptacle convex, hairy. Florets all hermaphrodite, tubular; limb five-parted; segments linear, fleshy at the apex; tube five-angled,

narrow at the base; filaments glandulously pilose. Anthers bristly at the base. Stigma two-cleft, segments approximate. Pappus sessile, feathery.

DESCRIPTION, &c.—There is only one species of this very singular genus: the name of *Erythrolæna* signifies a scarlet cloak, and alludes to the scarlet scales of the involucre.

1.—ERYTHROLÆNA CONSPICUA, *D. Don.* THE SHOWY MEXICAN SCARLET THISTLE.

ENGRAVINGS.—*Brit. Flow. Gard.* t. 134; and our *fig. 1* in Pl. 58.

SPECIFIC CHARACTER.—Stem erect, branched; lower leaves lanceolately pinnatifid, somewhat pubescent; upper ones dark-green, shining,

but paler on the under side, reticulately veined, segments spreading, spinously dentate, undulated; upper one lanceolate, spinously dentate. Involucre smooth; scales lanceolate, acuminate.

DESCRIPTION, &c.—This very showy plant has a stem eight feet high, with numerous branches; the leaves are very stiff and spiny, somewhat resembling those of the holly; the lower ones are more than three feet long, and more than a foot in breadth. The flowers are terminal; but they appear clustered at the end of the main stem, from the number of short branches into which it is divided at the upper part, each of which is crowned with a flower. The involucre is regularly conical, tapering to a point before expansion, and it is of a bright glossy scarlet; the flowers are insignificant, and in fact the plant looks much best before they are expanded; as at that period, from its large leaves and the brilliancy of its scarlet involucre, it is a most splendid object. It requires a free air and plenty of room, but it will grow in any common garden soil. It is a native of Mexico, whence it was introduced in 1824.

GENUS XXXV.

ONOPORDUM, *Lin.* THE COTTON THISTLE.

Lin. Syst. SYNGENESIA ÆQUALIS.

GENERIC CHARACTER.—Receptacle honey-combed. Pappus hairy. Involucre imbricated. Scales mucronate.

DESCRIPTION, &c.—The common Cotton Thistle is a native of Britain, where it is known by its purple flowers, and the dense, cottony web that covers the whole plant, but is easily detached by rubbing. The receptacle is succulent, and was formerly eaten like that of the artichoke. The seeds are oily, and are a favourite food for some kinds of birds; in France they have also been used for making oil. There is only one ornamental species of this genus, or rather there is only one cultivated in gardens. The name *Onopordum* signifies “to swell out an ass;” and it is supposed to allude to asses being so fond of the plant as to eat so much as to make them ill.

1.—ONOPORDUM ARABICUM, *Lin.* THE ARABIAN COTTON THISTLE.ENGRAVINGS.—Bot. Mag. t. 3299; and our *fig.* 2 in Pl. 59.

SPECIFIC CHARACTER.—Stem erect. Leaves somewhat woolly, de-

current, sinuately dentate. Scales of the involucre ovate-lanceolate, and each ending in a long, spinous mucro.

DESCRIPTION, &c.—This is a stately-looking plant, growing to the height of ten or twelve feet; with long, narrow leaves, sometimes more than a foot in length, and attached to the stem so as to make it appear winged. The involucre are large and spiny; the spines being connected by a kind of cobweb. The florets are numerous, and stand quite erect; they are of a dark purple. The species is a native of Arabia, but it was early introduced by the Spaniards into Buenos Ayres, where it grows in such abundance as to form what have been called the Thistle Forests of South America. It was formerly frequently grown in shrubberies, but now is seldom seen, from the great space it requires, and from its prickly leaves and stems rendering it difficult of approach. It is quite hardy, and will grow in any common soil.

GENUS XXXVI.

CARTHAMUS, *Lin.* THE SAFFLOWER, OR CARTHAMUS.*Lin. Syst.* SYNGENESIA ÆQUALIS.

GENERIC CHARACTER.—Heads homogenous. Outer involucreal scales foliaceous, spreading; middle ones erect, oval, expanded at the apex into an ovate appendage, which is spiny along its margin: the inner ones oblong, entire, each ending in a pungent point. Receptacle

fringed. Corollas five-cleft, almost regular, the tube expanding above the disk. Anthers each terminated by an obtuse appendage. Stigmas scarcely distinct. Achenia obovate, tetragonal, glabrous. Pappus wanting.

DESCRIPTION, &c.—The genus *Carthamus* has been very much altered, and all that bear a resemblance to the Cardoon have been placed in a separate genus. I have, however, preserved the old name, as being that which is best known. The word *Carthamus* is taken from an Arabian word, signifying “to paint;” because one of the species is used in dyeing, and also for making what is called vegetable rouge.

1.—CARTHAMUS CÆRULEUS, *Lin.* THE BLUE-FLOWERED CARTHAMUS.SYNONYM.—*Onobroma cæruleum*, *Gert.*; *Cnicus alter*, *Clus.*ENGRAVINGS.—Bot. Mag. t. 2293; and our *fig.* 3 in Pl. 59.

SPECIFIC CHARACTER.—Stem one-flowered. Leaves ovate-lanceolate, spinously dentate.

DESCRIPTION, &c.—A very handsome species, with dark blue flowers, and a rich chesnut-brown involucre. A native of Spain, introduced before 1640, and quite hardy in British gardens.

2.—CARTHAMUS ARBORESCENS, *Lin.* THE TREE CARTHAMUS.SYNONYM.—*Kentrophyllum arborescens*, *Dec.*; *Onobroma arborescens*, *Spreng.*; *C. rigidus*, *Willd.*; *C. hircinus*, *Lag.*

ENGRAVING.—Bot. Mag. t. 3302.

SPECIFIC CHARACTER.—Sub-pubescent. Lower leaves elongated,

lanceolate, stem-clasping, reticulated; upper leaves ovate-acuminate, eleven-nerved: both kinds sinuately spinous. Involucre, with a leafy base. Scales ovate, outer ones spinously dentate; inner ones ciliated.

DESCRIPTION, &c.—This very showy plant, though called a tree, is in fact a true perennial. It is a handsome plant for a shrubbery, with large yellow flowers and bright green leaves, both of which have an agreeable but musky smell. The flower continues in perfection to the latter end of November. The species is a native of Spain, whence it was introduced in 1731; and it will stand out in most English winters, only requiring protection in very severe frost.



1. *Erythrolana conspicua* — 2. *Onopordum arabicum* — 3. *Cirsium corulens*.

GENUS XXXVII.

SERRATULA, *Dec.* THE SAW-WORT.*Lin. Syst.* SYNGENESIA POLYGAMIA ÆQUALIS.

GENERIC CHARACTER.—Involucre imbricate, scales unarm'd. Receptacles bristly or chaffy. Pappus hairy, persistent. Hairs rigid, unequal.

DESCRIPTION, &c.—The plants belonging to this genus all bear considerable resemblance to the thistle, but they are easily distinguished by the scales of the involucre not being spiny. The genus takes its name from the leaves being supposed to bear some resemblance to a saw, but the resemblance is not very striking. Only a few of the species are ornamental.

1.—SERRATULA QUINQUEFOLIA, *Dec.* THE FIVE-LEAVED SERRATULA.ENGRAVING.—*Bot. Mag.* 1871.

SPECIFIC CHARACTER.—Leaves serrated, impari-pinnate; peduncles one-flowered. Scales of the involucre elongated, and coloured.

DESCRIPTION, &c.—A pretty little plant, resembling in habit and appearance the common saw-wort of the English woods. The flowers are pink, with bright-blue anthers and pink stigmas. The plant is quite hardy, and flowers in August. It is propagated by seeds or dividing the roots; and it will grow well under the shade of other trees. It is a native of the North of Persia, whence it was introduced in 1824. It takes its name of *Quinquefolia*, from its leaves consisting of two pair of leaves and one odd one, which last is generally much larger than the others.

2.—SERRATULA ALATA, *Willd.* THE WINGED SAW-WORT.SYNONYMES.—*Carduus alatus, D. Don*; *Jurinea alata, Dec.*ENGRAVING.—*Sweet's Brit. Flow. Gard.*, t. 103.

SPECIFIC CHARACTER.—Leaves entire, tomentose beneath, sudden-

tate, radical leaves cordate, petiolate; stem-leaves lanceolate, decurrent.

Head of flowers corymbose, paniculate. Involucre globose. Scales

lanceolate, rough.

DESCRIPTION, &c.—This species is a biennial: the stem grows about two feet high, and is much branched; the branches are furrowed, and more or less tomentose. The leaves are also densely clothed with a close white tomentum; the whole plant smells like musk. The flowers are numerous, and of a light reddish-purple. The plant is a native of Nepaul, whence it was introduced in 1812. It requires the usual treatment of biennials, and will succeed well in the common garden soil, in any clear open situation.

3.—SERRATULA SIMPLEX, *Sims.* THE ONE-FLOWERED SAW-WORT.SYNONYMES.—*Serratula blanda, Bieb.*; *S. cyanoides, Gært.*; *Carduus mollis, Willd.*; *Cirsium molle, Scop.*ENGRAVING.—*Bot. Mag.* t. 2482.

SPECIFIC CHARACTER.—Leaves pinnatifid; lobes distant from each other, and not touching, but spreading widely; stem simple, one-flowered. Involucre globose, rough. Seeds four-sided, warty.

DESCRIPTION, &c.—This plant, like the last, has a strong smell of musk. It is a hardy perennial, of no great beauty, from its single-flowered stem, which gives it a naked appearance. A native of Austria and Carniola, but also found near Mount Caucasus, whence it was sent to England in 1817. It will grow in any common garden soil, and in almost any situation.

GENUS XXXVIII.

CHÆTANTHERA, *Dec.* THE CHÆTANTHERA.*Lin. Syst.* SYNGENESIA POLYGAMIA SUPERFLUA.

GENERIC CHARACTER.—Involucre imbricate. Receptacle flat, smooth. Flowers of the ray numerous, feminine; exterior lip ligulate, tridentate, covered with a silky down beneath; inner lip slender, bidentate.

Flowers of the disk hermaphrodite, tubular, bilabiate; lips nearly equal. Seeds linear, oblong, four-sided. Pappus hairy, persistent.

DESCRIPTION, &c.—This genus is one of those called by modern botanists *Labiatifolia*, because each of the florets has two distinct lips, which are generally differently shaped. The name *Chætanthera* signifies a bristly anther, and refers to the anthers of the flowers, which have the appearance of bristles. Some of the species of the genus are annuals, and they are all natives of Chili.

1.—CHÆTANTHERA SERRATA, *D. Don.* THE SERRATED-LEAVED CHÆTANTHERA.

SYNONYMS.—*Chætanthera Chilensis, Dec.*; *C. spatulata, Poeppig*; *Perdicium Chilense, Willd.*; *Proselia serrata, Don.*
ENGRAVINGS.—*Brit. Fl. Gard.*, 2d series, t. 214; and our *fig. 4* in *Pl. 59*.

SPECIFIC CHARACTER.—Leaves linear, somewhat wedge-shaped, serrated at the apex. Scales of the involucre lanceolate, mucroate. Pappus somewhat bristly.

DESCRIPTION, &c.—This very pretty little plant is an evergreen, growing in low tufts, with large golden yellow flowers; the stems, when old, become somewhat shrubby at the base. It is a native of Chili, whence it was introduced in 1835; and though it grows readily in any sandy soil, it is easily killed by wet.

GENUS XXXIX.

CHAPTALIA, *Pursh.* THE CHAPTALIA.*Lin. Syst.* SYNGENESIA POLYGAMIA NECESSARIA.

GENERIC CHARACTER.—Receptacle naked. Pappus simple. Flowers of the ray in two irregular series, feminine; flowers of the disk masculine, bilabiate.

DESCRIPTION, &c.—There is only one species of this genus, which was named in honour of Monsieur Chaptal, a French botanist.

1.—CHAPTALIA TOMENTOSA, *Pursh.* THE WOOLLY-LEAVED CHAPTALIA.

SYNONYMS.—*C. integrifolia, Vent.*; *Tussilago integrifolia, Michx.*; *Perdicium semiflosculare, Walt.*
ENGRAVING.—*Bot. Mag.* t. 2257.

SPECIFIC CHARACTER.—Leaves obovate-oblong, reversedly dentate; upper surfaces covered with a thick wool, and under surface with a silvery tomentum. Flower naked.

DESCRIPTION, &c.—This little plant at first sight has almost the appearance of some kind of daisy, as it has no stem but the flower-scapes, which rise from a tuft of leaves, as in that flower. The leaves themselves are peculiar; they are toothed, but with the teeth the reverse way, that is, directed downwards towards the footstalk of the leaf. The upper surface of the leaf is green, but covered with a thick wool; and the under surface is pale and covered with a dense, white, silky pubescence. The flowers are white, with a yellow disk, but they never open fully, and are what botanists call nodding, that is, slightly bent downwards from the stalk. The plant is a hardy perennial, a native of North America, whence it was introduced in 1806; and it only requires the common culture of garden flowers.

GENUS XL.

MOSCHARIA, *Dec.* THE MOSCHARIA.*Lin. Syst.* SYNGENESIA *ÆQUALIS*.

GENERIC CHARACTER.—Involucre five-cleft. Receptacle chaffy, | the base. Flowers hermaphrodite, bilabiate, equal. Pappus chaffy, chaff irregularly formed, the outer row hood-shaped, and gibbous at | very short in many parts.

DESCRIPTION, &c.—This plant was named *Moscharia* by the late Professor De Candolle, from its strong musky smell. There is only one species.

1.—MOSCHARIA PINNATIFIDA, *Dec.* THE PINNATIFID-LEAVED MOSCHARIA.SYNONYME.—*Gastrocarpha runcinata*, *D. Don*.ENGRAVING.—Sweet's *Brit. Flower Garden*, t. 229.

SPECIFIC CHARACTER.—Leaves alternate, runcinately pinnatifid,

upper ones stem-clasping. Segments lanceolate, mucronate, undulate, and acutely dentate. Flowers pedunculate, and in diffuse panicles.

DESCRIPTION, &c.—This plant, though called an annual in Sweet's *Brit. Flow. Garden*, is in fact a biennial, as it does not flower till the second year, unless raised in heat. It is a native of Chili, whence it was introduced in 1826. The flowers are white, and the whole plant has a strong musky smell. It is more singular than beautiful, yet it is more frequently grown than some other species which appear much more worthy of cultivation.

GENUS XLI.

CATANANCHE, *Lin.* THE CATANANCHE.*Lin. Syst.* SYNGENESIA *POLYGAMIA ÆQUALIS*.

GENERIC CHARACTER.—Receptacle chaffy. Involucre imbricate. Pappus bristly, each calyx having five bristles.

DESCRIPTION, &c.—There are only two species in this genus, one an annual with yellow flowers, the other with blue flowers, and a perennial. The word *Catananche* means a strong stimulant, and relates to the supposed medicinal virtues of the plant.

1.—CATANANCHE CÆRULEA, *Lin.* THE BLUE CATANANCHE.SYNONYME.—*C. chondrille*, *Bauh.*ENGRAVINGS.—*Bot. Mag.* t. 293; and our *fig. 3* in *Pl. 539*.

SPECIFIC CHARACTER.—Scales of the involucre inferior, ovate. Flowers blue.

DESCRIPTION, &c.—This very beautiful plant is a native of the South of France, where it grows on hills among pieces of loose rock and stones, from which it appears scarcely possible for it to obtain sufficient nourishment. It is a true perennial, and quite hardy, so long as it is grown in dry soil; but it is easily killed by wet. The flowers appear in July, and continue till October. It is generally propagated by seeds, which should be sown in spring, and transplanted the following autumn to the border where the plants are to flower. This is said to be the best mode of culture; as though the plants raised from seeds sown in autumn as soon as the seeds are ripe, will flower sooner, they are so much injured by having to pass the winter while in a comparatively feeble state, as rarely to make good plants. After the first transplanting, the plants should not be taken up, as they are always injured by removal; and, indeed, some florists carry this feeling so far as to sow the seeds in the place where they wish the plant to remain. It must be observed, that though this species

should always be planted in a dry soil, and should be kept as dry as possible during winter, it requires abundance of water when it is about to flower. It was introduced before 1640; and consequently it has been a common garden flower in this country above two hundred years.

GENUS XLII.

UROSPERMUM, *Scop.* THE SHEEP'S BEARD.

Lin. Syst. SYNGENESIA POLYGAMIA ÆQUALIS.

GENERIC CHARACTER.—Receptacle naked. Pappus feathery, stalked. Involucre of the calyx eight-parted, glabrous.

DESCRIPTION, &c.—This genus is very nearly allied to Tragopogon, the Goat's-beard; but it has been separated on account of the involucre being tubular at the base. The botanic name is derived from two Greek words, signifying a shoal of seeds. There is only one perennial species.

1.—UROSPERMUM DALECHAMPII, *Scop.* THE GREAT-FLOWERED SHEEP'S BEARD.

SYNONYMES.—Anopogon Dalechampii, *Willd.*; Tragopogon Dalechampii, *Lin.*; T. verticillatum, *Lam.*

ENGRAVING.—Bot. Mag. t. 1623.

SPECIFIC CHARACTER.—Involucre pubescent, unarmed. Leaves pin-natifidly runcinate.

DESCRIPTION, &c.—A coarse-growing plant, with a large head of pale yellow florets, which are purple on the back. The leaves are large, and somewhat coarse, with very strongly-marked veins. It is a hardy perennial, a native of Spain and the southern part of France, whence it was introduced before 1739. It is now very seldom seen in gardens.

GENUS XLIII.

SCORZONERA, *Lin.* THE VIPER'S GRASS.

Lin. Syst. SYNGENESIA POLYGAMIA ÆQUALIS.

GENERIC CHARACTER.—Receptacle naked. Pappus feathery, with a short stalk. Involucre imbricated. Scales rough at the margin.

DESCRIPTION, &c.—The common Scorzonera, or Viper's Grass, (*S. hispanica*), is a well-known plant in Spain, where it is considered as a sure remedy against the bite of a viper; the name Scorzonera signifying literally Viper Grass. The roots of the common species are frequently cooked and sent to table; and its flowers are yellow, but not ornamental. Most of the other species have yellow flowers, but some are purple or rose-coloured. Only one kind is worth growing in flower-gardens.

1.—SCORZONERA PURPUREA, *Lin.* THE PURPLE VIPER-GRASS.

ENGRAVINGS.—Bot. Mag. t. 2294; and our fig. 1 in Pl. 59.

SPECIFIC CHARACTER.—Leaves linear, subulate, channelled, or triangular. Stem branched. Peduncles cylindrical.

DESCRIPTION, &c.—The large-flowered variety of this very handsome plant is well deserving of cultivation in any garden. It is quite hardy, and produces its very showy lilac flowers in May. It is a native of Austria, whence it was introduced in 1759.



1. *Scorzenera purpurea*. 2. *Lactuca perennis*. 3. *Cotonanthe corulea*.
4. *Chidanthus serrata*. 5. *Pionanthus alba*.

GENUS XLIV.

LACTUCA, *Lin.* THE LETTUCE.*Lin. Syst.* SYNGENESIA POLYGAMIA ÆQUALIS.

GENERIC CHARACTER.—Receptacle nearly naked. Involucre imbricate. Scales with margin. Pappus simple, stipitate. Seeds smooth.

DESCRIPTION, &c.—My readers will, perhaps, be surprised at my introducing the Lettuce in my series of ornamental plants; but I think the flowers of one of the species so pretty, and the leaves so unlike those of the common garden Lettuce, that it appears to me worth cultivation. The word *Lactuca* is derived from *Lac* (milk), in allusion to the milky juice which is abundant in all species.

1.—LACTUCA PERENNIS, *Lin.* THE PERENNIAL LETTUCE.SYNONYMS.—*Chondrilla cærules*, *Bauh.*; *C. altera*, *Dodd.*ENGRAVINGS.—*Bot. Mag.* t. 2130; and our *fig. 2*, in Pl. 59.

SPECIFIC CHARACTER.—All the leaves pinnatifid. Segments linear, occasionally dentate. Flowers in corymbose panicles.

DESCRIPTION, &c.—This species, though a native of the southern parts of Europe, is quite hardy in British gardens, in a dry calcareous soil. It flowers from June to August, and its flowers, which are light purple, with a white centre, have a gay and brilliant appearance. It was introduced before 1596.

GENUS XLV.

PRENANTHES, *Lin.* THE PRENANTHES.*Lin. Syst.* SYNGENESIA POLYGAMIA ÆQUALIS.

GENERIC CHARACTER.—Receptacle naked. Involucre calyx-like. Seeds cylindrical, striated, truncate in the upper parts. Pappus simple, sessile.

DESCRIPTION, &c.—The genus *Prenanthes* was founded by Linnæus, but the species it contained have been since nearly all distributed among other genera. They are rather pretty, and one is well deserving of cultivation. The word *Prenanthes* is derived from two Greek words, signifying a drooping flower. All the species are hardy.

1.—PRENANTHES ALBA, *Lin.* THE WHITE PRENANTHES.SYNONYMS.—*P. survis*, *Sal.*; *Narbalus suavis*, *Dec.*; *N. albus*, *Hook.*; *Harpalyce alba*, *D. Don.*ENGRAVINGS.—*Bot. Mag.* t. 1079; and our *fig. 5*, in Pl. 59.

SPECIFIC CHARACTER.—Flowers numerous, subumbellate. Leaves angular, dentate.

DESCRIPTION, &c.—This very pretty plant, though now so seldom grown, is well deserving of cultivation. It is a native of North America, and, consequently, quite hardy in British gardens, where it will grow from three to six feet high in any common garden soil. The stems are generally purplish; the involucre are of a dark purple; and the flowers milk-white. The anthers are a brownish yellow, and the stigmas, which project a long way beyond the flower, are green. The flowers are sweet-scented; but the whole plant abounds in a milky juice, that is so intensely bitter, that, in Georgia, where the plant grows wild, it is called the Gall-of-the-earth. The American Indians use it as a remedy for the bite of venomous serpents. It was introduced in 1778, and it is propagated either by seeds or by dividing the roots. It flowers in July and August.

P. ALTISSIMA, Willd.

This was the first species of the genus that was introduced, as it was sent from N. America to England in 1696. It is a very tall-growing plant, and the flowers are yellow.

P. SERPENTARIA, Lin.

The flowers are of a dark purple, and they do not appear till September, remaining on till they are killed by frost. This is also a native of North America, whence it was introduced in 1823.

P. RUBICUNDA.

The flowers are white, and the involucre rose-colour. A native of Carolina, and also introduced in 1823.

P. PURPUREA, Willd.

A native of Germany, with dark purple flowers; introduced in 1658.

P. HISPIDEA, Sal.

A native of Siberia, with yellow flowers; introduced in 1823. This species flowers in June.

P. DIVERSIFOLIA, Sal.

This species has also yellow flowers, and is a native of Siberia; but it is a biennial. It was introduced in 1827.

GENUS XLVI.

LASIOPUS, *D. Don.* THE LASIOPUS.*Lin. Syst.* SYNGENESIA POLYGAMIA ÆQUALIS.

GENERIC CHARACTER.—Seeds compressed, flat, tubercled, and rough at the margin, with a short beak at the apex. Disc dilated, orbiculate. Pappus in several rows. Involucre imbricated in several series. Rachis entirely surrounded by bracts.

DESCRIPTION, &c.—There is only one species in this genus, and it is a plant so much resembling the common Dandelion, that it would not have been worth mentioning, had it not been interesting in a botanical point of view. The name *Lasiopus* means hairy-footed, and alludes to the peduncles of the flowers.

1.—LASIOPUS SONCHUS, *D. Don.* THE SOW-THISTLE-LIKE LASIOPUS.

ENGRAVING.—Sweet's Brit. Flow. Gard. 2 Series, t. 346.

SPECIFIC CHARACTER.—Leaves pinnatifid. Stems simple, naked, one-flowered. Flower-heads oval. Pappus white.

DESCRIPTION, &c.—A hardy perennial. A native of Armenia, whence it was introduced in 1835. It is quite hardy, and has a cheerful appearance from its bright yellow flowers, though it is too much like the common British weed to render it deserving of cultivation.

GENUS XLVII.

TROXIMON, *Pursh.* THE TROXIMON.*Lin. Syst.* SYNGENESIA ÆQUALIS.

GENERIC CHARACTER.—Involucre double; exterior loosely imbricated with ovate lanceolate scales; inner with ten or twelve closely packed scales. Receptacles flat, somewhat honey-combed, and oblong. Pappus hairy towards the beak. attenuated towards the beak. Pappus hairy towards the beak in several series.

DESCRIPTION, &c.—The word *Troximon* signifies eatable. There are two species in the genus, both natives of North America

1.—TROXIMON GLAUCUM, *Pursh.* THE GLAUCCUS-LEAVED TROXIMON.

ENGRAVINGS.—Bot. Mag. t. 3462.

SPECIFIC CHARACTER.—Leaves lanceolate, attenuated towards the lower part, slightly dentated. Flowers large; corolla hairy at the mouth.

DESCRIPTION, &c.—There are two plants figured in the Botanical Magazine under the name of Troximon glaucum, but which are so different from each other as to agree only in the circumstance of both having glaucous leaves. Thus the name of glaucum will apply to both; but it appears now decided that the plant with the largest flowers shall be called *T. glaucum*, and the other *T. cuspidatum*, though the leaves of the second species are more glaucous than the first. *T. glaucum* is then a strong-growing plant, with numerous radical leaves, eight or ten inches long, and no proper stem. Numerous flower-scapes, however, rise from the radical leaves, each bearing a large bright yellow flower. The involucre consists of numerous scales, the outer ones of which are thickly covered with white woolly hairs. The whole plant abounds in milky juice. The root is fleshy, sending out numerous runners, by which the plant is rapidly increased. It is a native of the Rocky Mountains, in N. America, whence it was introduced from seeds gathered by Mr. Drummond, who accompanied Sir John Franklin's land expedition in search of the North-west Passage.

2.—TROXIMON CUSPIDATUM, *Pursh.* THE CUSPIDATE TROXIMON.SYNONYMS.—*T. glaucum*, *Sims.*; *T. marginatum*, *Nutt.*

ENGRAVINGS.—Bot. Mag. t. 1667.

SPECIFIC CHARACTER.—Scape, one-flowered. Outer scales of the involucre cuspidate. Leaves, linear, entire, and very glaucous.

DESCRIPTION, &c.—This plant is very different from the preceding species; as, instead of the root-leaves forming a sort of tuft, they stand erect, and partially sheath the flower-scape. The leaves themselves are extremely glaucous, with a very broad white mid-rib, which is prominent on the upper side; and they are slightly tinged with pink below. The outer scales of the involucre are few; they are a deep purple, and in shape resemble the cusps of a Gothic window. The flowers are a bright yellow, and the anthers are dark orange. The plant is a native of the banks of the Missouri, in North America, and was introduced in 1811. It flowers in May.

CHAPTER XXVII.

CAMPANULACEÆ.

CHARACTER OF THE ORDER.—Calyx superior, usually five-lobed, persistent. Corolla monopetalous, inserted into the top of the calyx, usually five-lobed, withering on the fruit, regular aestivation valvate. Stamens inserted into the calyx alternately with the lobes of the corolla, to which they are equal in number. Anthers two-celled, distinct. Pollen spherical. Ovary inferior, with two or more poly-

spermous cells opposite the stamens, or with as many lobes as there are cells. Fruit dry, crowned by the withered calyx and corolla, dehiscing by lateral irregular apertures or by valves at the apex, always loculicidal. Seeds numerous, attached to a placenta in the axis; embryo straight, in the axis fleshy albumen; radicle inferior.—(*Lindley.*)

DESCRIPTION, &c.—There are about twenty-one genera comprised in this order, the greater part of which are herbaceous plants, and the rest under-shrubs; they all abound in a white milky juice; and about half of them are hardy. The leaves are generally alternate, without stipules. The flowers are usually blue or white, and very rarely yellow. The name of Campanulacæ is taken from the genus Campanula, the flowers of which are

bell-shaped, *Campanula* signifying a little bell. The plants belonging to this order are nearly allied to *Compositæ*, many genera of which have also a milky juice; but the *Campanulacæ* are distinguished by their anthers being free; and their fruit many-seeded. They have also always a number of short stiff hairs on the style, to collect the pollen from the anthers, which burst before the stigma is ready to receive it, and even while the flower is yet in the bud. Hairs of a similar nature are found in some few of the *Compositæ*, but then the anthers are always combined into a tube. The milky juice of the *Campanulacæ* is also rather acrid, and the leaves of the plants are not fleshy; whereas when the *Compositæ* have milky juice it has stupefying qualities, and the leaves which contain it are succulent. None of the *Campanulacæ* are of much use; though some few, such as the *Rampion*, are occasionally eaten. The flowers of all, however, are highly ornamental, and they are well deserving of cultivation in every garden. By far the greater part of the species are natives of the temperate regions of Asia, Europe, and North America; though some are natives of the Cape of Good Hope, and a few are found within the tropics.

GENUS I.

JASIONE, *Lin.* SHEEP SCABIOUS.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft. Corolla deeply five-parted; segments linear, lanceolate. Stamens five, with slender filaments, and with the anthers combined into a tube at the base; pollen blue or purplish. Style pilose from the middle to the apex; the pili, or hair,

disposed in ten rows; stigmas two, short. Capsule two-celled, spheroid or ovoid, dehiscent by a broad hole at top, with very short valves. Seeds small, ovoid, shining.—*G. Don.*

DESCRIPTION, &c.—The genus *Jasione* seems rather to belong to *Compositæ* than to *Campanulacæ*, as its flowers are in heads and its anthers are united. There is, however, the important difference that the seed-vessels are many-seeded, whereas those of the *Compositæ* have only one seed in each, which adheres to its covering, and is of the kind called an achenium. The flower-heads of the *Jasione* have also distinct bracts, instead of being furnished with an involucre of many bracts grown together; and the style is covered with hairs to collect the pollen from the anthers, as in the other genera of the order. The name of *Jasione* was used by Theophrastus, but its meaning is not known.

1.—JASIONE PERENNIS, *Lam.* THE PERENNIAL SHEEP SCABIOUS.

SYNONYMES.—*J. montana* var. *Willd.*; *J. levis*, *Lam.*

ENGRAVINGS.—*Bot. Reg.* t. 505; *Bot. Mag.* t. 2198; *Bot. Cab. t.* 923; and our *fig.* 1, in Pl. 60.

SPECIFIC CHARACTER.—Stems erect, simple. Leaves rather hairy; radical ones obovate; cauline ones oblong-linear, flat; peduncles naked; bracts, pilose inside.

DESCRIPTION, &c.—A very showy handsome plant, with much larger heads of flowers than the common *Sheep Scabious*, and the flower of a deeper blue. The leaves are strictly linear, that is, they are neither tapering at the points, nor waved nor curled at the edge. The species is a native of the South of France, whence it was introduced in 1787. It should be grown in a warm dry border, open to the south. It is a most abundant flowerer, and the flowers last nearly all the summer.

There are two or three other perennial species; but they appear very closely to resemble the above. The common English *Sheep Scabious* is an annual.



1. *Jasione perennis*. — 2. *Michauxia Campanuloides*. — 3. *Phyteuma longicaule*.
 4. *Petromarula pinnata*.

GENUS II.

PHYTEUMA, *Lin.* THE RAMPION.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft. Corolla five-parted; segments cohering together a long time, and in one species always. Stamens five, alternating with the lobes of the corolla; filaments long, filiform, broadest at the base; anthers free, pollen violaceous or red-

dish. Style filiform, pilose. Ovarium inferior, two or three-celled. Capsule dehiscing laterally by two or three valves at the base or middle part. Seeds ovoid, sometimes a little compressed, usually shining.

DESCRIPTION, &c.—There are numerous species in this genus, all perennials, but, generally speaking, they have so great a family likeness to each other that a few will suffice to give a general idea of all the rest. The name of *Phyteuma* was used by Dioscorides, but its meaning is not known.

1.—PHYTEUMA CORDATA, *Vill.* THE HEART-LEAVED PHYTEUMA, OR HORNED RAMPION.

SYNONYMES.—*P. comosum*, *Don.*; *P. brevifolium*, *Schle.*

ENGRAVING.—*Bot. Mag.* t. 1406.

SPECIFIC CHARACTER.—Bracts cordate-acuminate. Head of flower

sub-globose, very short. Radical leaves oblong, cordate, crenate; stem leaves half clasping the stem. Stigmata three-cleft.

DESCRIPTION, &c.—This very curious head of flowers looks at a little distance almost like a gigantic specimen of Clover. The species is a native of Mount Caucasus, whence it was introduced about 1810. It is quite hardy, and it is propagated either by seeds or dividing the root.

2.—PHYTEUMA SCHEUCHZERI, *Willd.* THE SWISS RAMPION.

SYNONYMES.—*P. ovatum*, *Lam.*; *P. corniculatum*, *Clairn.*; *Ranunculus alpinus*, *Scheuchz.*

ENGRAVING.—*Bot. Mag.* 1797.

SPECIFIC CHARACTER.—Radical leaves petiolate, ovate-lanceolate,

bluntly serrated; lower cauline ones linear, lanceolate, acutely serrated; upper ones linear, nearly entire of flowers. Heads, spherical; bracts very long, reflexed.

DESCRIPTION, &c.—This species bears some resemblance to the last, as the flowers are still in round heads, but the heads are more spreading, and not so decidedly horn-shaped. The stems are erect, and grow about a foot and a half high; the leaves are long and narrowed at both extremities. It is a native of Switzerland, whence it was introduced in 1813, and it flowers in May and June. It will grow in any soil and situation, and it may be propagated either by seeds or dividing the root.

3.—PHYTEUMA SCORZONERIFOLIUM, *Vill.* THE SCORZONERA-LEAVED RAMPION.

ENGRAVINGS.—*Bot. Mag.* 2271; and our *fig. 2*, in Pl. 60.

SPECIFIC CHARACTER.—Leaves of various forms; radical ones petio-

late, ovate-cordate, or ovate; cauline leaves linear-lanceolate; spike ovate; bractes reflexed, linear, glabrous.

DESCRIPTION, &c.—An elegant plant, with a long spike of loose dark purple flowers, with dark orange or reddish-purple stamens. The stem is erect and slender, and the leaves are very long and narrow, and they are sharply toothed. The spike of flowers is cylindrical, and very handsome, from the colour of the flowers and the elegance of their long club-shaped stigmas. There is a variety with white flowers. It is a native of the Alps of Dauphiné, whence it was introduced in 1817. It is quite hardy, and will grow in any soil or situation that is not too rich.

4.—PHYTEUMA BETONICÆFOLIUM, *Vill.* THE BETONY-LEAVED RAMPION.

ENGRAVING.—Bot. Mag. t. 2066.

SPECIFIC CHARACTER.—Lower leaves oblong-acuminated, simply serrulated; superior ones linear-lanceolate, nearly entire; spikes ovoid, almost bractless. Stigmas, three.

DESCRIPTION, &c.—A very curious-looking plant, not nearly so handsome as the last, but more singular-looking, from the petals of the flowers curling up and leaving the projecting stigmas. It is also a native of the mountains of Dauphiné, whence it was introduced in 1816. It flowers from June to August. It will grow in any common garden-soil or situation.

5.—PHYTEUMA STRIATA, *Lin.* THE UPRIGHT RAMPION.SYNONYMES.—*P. Limoniifolium*, *G. Don.*; *P. stylosum*, *Schrank.*;
P. virgatum, *Lod.*

ENGRAVINGS.—Bot. Mag. t. 2145; Bot. Cab. 1667.

SPECIFIC CHARACTER.—Stem branched. Radical leaves on long petioles, quite glabrous, lanceolate, a little toothed. Spikes long, interrupted. Calyx glabrous. Capsules ovoid, glabrous.

DESCRIPTION, &c.—An elegant little plant, with large pale blue flowers, very widely apart. It is a native of the Levant. It is quite hardy, and appears to have been introduced about 1818.

6.—PHYTEUMA CAMPANULOIDES, *Sims.* THE CAMPANULA-LIKE RAMPION.

ENGRAVING.—Bot. Mag. t. 1015.

SPECIFIC CHARACTER.—Stem, simple, erect. Flowers in threes, in long compound racemes. Leaves ovate, bluish, crenated; middle ones

broad, sessile; upper ones lanceolate and somewhat serrated, pubescent beneath.

DESCRIPTION, &c.—This is the handsomest of all the species, as its dark purple flowers are produced alternately, in clusters of three each, in a long spike (or rather in a close raceme, as the flowers have footstalks, though very short ones). The leaves are small, and not very handsome. The species is quite hardy, and flowers in July and August; it may be propagated by dividing the roots, and it will grow in any common garden soil. It is a native of Mount Caucasus, and was introduced in 1804.

7.—PHYTEUMA SPICATUM, *Willd.* THE SPIKED RAMPION.SYNONYME.—*Rapunculus spicatus*, *Mill.*

ENGRAVING.—Bot. Mag. t. 2347.

SPECIFIC CHARACTER.—Lower leaves on long petioles, cordate-ovate,

acute, biserrated; upper ones ovate-lanceolate. Spikes cylindrical, elongated. Bracts linear-subulate, glabrous; stigma two-cleft.

DESCRIPTION, &c.—The flowers of this species have no beauty to recommend them, as they are of a dirty yellowish white; but it is said that there is a variety which has a blue tint. The species is a native of Middle Europe, and it was introduced in 1812. It is quite hardy, and only requires the common garden culture.

GENUS III.

PETROMARULA, *Pers.* THE CANDIOT RAMPION.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft. Corolla five-parted. Stamens five, alternating with the lobes of the corolla. Filaments dilated at the base, longer than the anthers. Style glabrous. Stigma capitate, fleshy, and hairy. Ovary three-celled, inferior; capsule erect.

DESCRIPTION, &c.—There is only one species of this genus, which takes its name from two Greek words, signifying the Herb of the Rock, from the plant in its native state always growing on rocks or mountains. It was formerly included in the genus *Phyteuma*; but it has been separated on account of its fleshy, capitate stigma and more deeply-lobed leaves.

1.—PETROMARULA PINNATA, *Pers.* THE WINGED CANDIOT RAMPION.

SYNONYMES.—*Phyteuma pinnata*, *Linn.*; *Rapunculus creticus*, *fig. 4*, in Plate 60.
Bauh.

ENGRAVINGS.—*Swt. Brit. Flow. Gard.* 2d series, t. 224; and our *SPECIFIC CHARACTER*.—Radical leaves petiolate, ovate, acute, petio-
 late, marginate, and lobate. Flowers in lax racemes, pedicellate.

DESCRIPTION, &c.—This species grows in tufts on the rocky shores of Candia, (the ancient Crete,) and also on some mountains in Italy. It was first introduced in 1640, but appears to have been lost, and again introduced several times; and still it is seldom seen in collections, from the great difficulty which attends its culture. It grows well in the open ground, if planted in May, in a rich loamy soil, sending up forty or fifty stems, and blossoming in August, but requires protection during winter; and it is very difficult to propagate, as the roots are fleshy, and so full of milky juice as to bleed exceedingly when divided; and the seeds are generally abortive, unless care be taken to apply the pollen to the stigma.

GENUS IV.

MICHAUXIA, *Lin.* THE PERSIAN BELL-FLOWER.

Lin. Syst. OCTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx eight or ten-cleft, having the recesses covered by appendages. Corolla eight or ten-parted, rotate. Stamens eight or ten, free. Filaments very broad, membranous, approximate at the base. Anthers yellow, cuspidate at the apex. Style covered by hairs, which are disposed in sixteen rows. Stigmas eight, filiform.

Ovary inferior, eight-celled; cells opposite the calycine lobes. Capsule drooping, eight or ten valved, dehiscent at the base. Seeds numerous, ovate, rusty, inserted in fleshy receptacles, which are situated at the inner angles of the cells.

DESCRIPTION, &c.—There are only two species of this genus, both of which are biennials, and natives of the East, with very singular flowers and lyrate leaves. Their unpronounceable generic name was given them in honour of the celebrated Michaux, botanist to Louis XVI. of France. Notwithstanding the difficulty of pronouncing this name, it is perhaps less objectionable than many of those given to plants in honour of persons; as Michaux was really a great botanist, who not only immortalised himself by his work on the Trees of America, but actually discovered the genus which has been named after him.

1.—MICHAUXIA CAMPANULOIDES, *Lherit.* THE CAMPANULAR-LIKE MICHAUXIA, OR LYRATE-LEAVED CAMPANULA.

SYNONYMES.—*M. strigosa*, *Pers.*; *Campanula lyræfolia*, *Sal.*; *Mindium rhazes*, *Adan.*; *Medium dioscorides*, *Ranv.*

ENGRAVINGS.—*Bot. Mag.* t. 219; and our *fig. 2*, in Pl. 60.

SPECIFIC CHARACTER.—Stem pilose; radical leaves lanceolate, irregularly lobed; petioles marginate, lobed; appendages of the sinuses of the calyx shorter than the lobes.

DESCRIPTION, &c.—This very singular plant, when the flowers are in the bud, bears a close resemblance to the Campanula; but when the flowers open, the corolla divides into eight petals, which curl back, and show the broad filaments growing close together at the base. The anthers are yellow, and the stigma is divided into eight lobes. There are also eight stamens, and the limb of the calyx is divided into eight parts. The stems are red, and the flowers white, tinged with pink. The leaves are large, and irregularly-lobed, with a very conspicuous mid-rib; and the root is fusiform, that is, shaped like a spindle. The plant grows about six feet high, and produces its numerous flowers in July and August. It was found near Aleppo, and on Mount Lebanon. It was introduced in 1787; and, though it was at first supposed to require a greenhouse, it is now found to be

quite hardy, except as regards ripening its seeds, which it very rarely does in any quantity. It is a biennial, the seeds of which should be sown in autumn, and the young plants suffered to remain in the seed-bed till May, when they should be removed to where they are to flower.

2.—MICHAUXIA LÆVIGATA, Vent. THE SMOOTH MICHAUXIA.

SYNONYME.—*M. decandria*, Fisch.

ENGRAVING.—Bot. Mag. t. 3128.

SPECIFIC CHARACTER.—Stem very tall, glabrous, and shiny; leaves doubly dentate, hispid; radical leaves ovate on long petioles;

stem leaves sessile, oblong, lower ones attenuated at the base, upper ones cordate; the corolla, calyx, stamens, and stigma are all in ten parts each.

DESCRIPTION, &c.—This plant is a perennial, with a branched fleshy root. The stem grows above eleven feet high, smooth, shining, upright, and perfectly straight. The leaves are sprinkled on both sides with harsh erect hairs, and the flowers are scattered nearly the whole length of the stem, expanding slowly and in succession from below upwards. The flowers are white, and are divided into ten slender segments, about an inch long, which spread out instead of curving backwards. The anthers are also very slender. The flowers are not very ornamental, but they continue appearing nearly all the summer and autumn; and the whole plant yields a large quantity of milky juice. The species is a native of Persia, and it was introduced in 1830. The root appears quite hardy, but the stems are killed down to the ground every winter, generally before all the flower-buds are expanded.

GENUS V.

CANARINA, Martyn. THE CANARINA.

Lin. Syst. HEXANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx six-cleft. Corolla six-lobed at the apex, large, campanulate. Stamens six, free; filaments thickest at the

base, glabrous. Style inclosed, hispid above, the hairs disposed in twelve rows. Stigmas six. Capsule six-celled, dehiscing at the apex.

DESCRIPTION, &c.—The only species that has been introduced into England, being a native of the Canary Islands, the name of Canarina was given to the genus; but this name is obviously a very bad one, as another species has been since found in Africa, and others may exist in different parts of the world.

1.—CANARINA CAMPANULA, Lam. THE CANARY BELL-FLOWER.

SYNONYME.—*Campanula canariensis*, Lin.

ENGRAVINGS.—Bot. Mag. t. 444; Bot. Cab. t. 1376.

SPECIFIC CHARACTER.—Plant glaucescent. Root tubrous, fusiform.

Stems ascending. Leaves hastately subcordate, irregularly toothed. Flowers solitary, terminating or axillary.

DESCRIPTION, &c.—This very singular plant grows to the height of about six feet, with handsome leaves, the mid-ribs of which are slightly tinged with pink. The flowers are of a pale yellowish-orange, tinged with red, and drooping. The plant is a native of the Canary Islands, whence it was introduced in 1696; but is now seldom grown, as it begins to flower in winter, and continues in blossom till March; and thus it is generally killed if planted in the open air. It looks very well, however, if planted in the open ground of a conservatory, or in boxes protected by a verandah. It is rather difficult to propagate, as if its roots be broken or wounded in dividing them, the milky juice will flow plentifully, and this generally occasions them to rot. When planted in the open air, the soil should be a light sandy loam, mixed with a fourth part of lime-rubbish. When the plant

has done flowering, the stems generally die down to the ground, and the plant remains in a dormant state all the summer; but it should be still kept in a warm dry situation, so that the roots may be properly matured for the following year. It is very suitable for sheltered situations on the South and West coast.

GENUS VI.

ADENOPHORA, *Alph. Dec.* THE ADENOPHORA, OR SIBERIAN BELL-FLOWER.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft. Corolla campanulate or funnel-shaped, five-lobed at the apex. Stamens free. Filaments erect, smooth. Stigma three-lobed. Capsule three-celled, opening on the side and base by three valves. Seeds ovate, very small and flat.

DESCRIPTION, &c.—The very elegant flowers that compose this genus are easily distinguished from the true Campanulas by their projecting style and their irregularly shaped leaves. The generic name is derived from two Greek words, signifying “bearing glands,” in allusion to the stigma being clothed with glandular hairs while in its club-shape, in which it first appears though it becomes three-cleft when ripe.

1.—ADENOPHORA INTERMEDIA, *Sweet.* THE INTERMEDIATE ADENOPHORA.

SYNONYMS.—*Campanula intermedia*, *Ram. et Schult.*; *Campanula stylora*, *Hort. Par.*

ENGRAVINGS.—*Sweet's Brit. Flow. Gard.*, 2d Series, t. 108; and *vol. I.*, in Plate 61.

SPECIFIC CHARACTER.—Radicl leaves petiolate, cordate, dentate. Stem leaves lanceolate, attenuated at the base, closely serrated; lower ones on short petioles, elliptico-lanceolate; upper ones sessile, acuminate; panicles of flowers naked, style very long.

DESCRIPTION, &c.—This very elegant plant produces several stems from the same root, which attain, when the plant is strong, the height of three feet; the panicle of flowers is about a foot long; the leaves are variable in form, but they are all smooth, and of a pale green; the flowers are of a pale blue, small, and gracefully drooping, with a style which is about twice the length of the corolla, being very smooth and slender at the base, and thickening upwards, where it is densely covered with glandular hairs. The stigma is three-cleft, with the points bent back. This very elegant plant is a native of Siberia, whence it was introduced in 1820; but notwithstanding it comes from so cold a country, it is sometimes injured by spring frosts; it flowers in May. It is propagated by dividing the root, or by seeds.

2.—ADENOPHORA VERTICILLATA, *Fisch.* THE WHORL-LEAVED ADENOPHORA.

SYNONYMS.—*Campanula verticillata*, *Pall.*; *C. tetraphylla*, *Thunb.*

ENGRAVING.—*Sweet's Brit. Flow. Gard.*, 2d Series, 160.

SPECIFIC CHARACTER.—Radicl leaves petiolate, subrotund, ovate,

serrated. Stem-leaves nearly sessile, lanceolate, verticillate; teeth of the calyx linear, acute. Corolla sub-tubular, only half the length of the style.

DESCRIPTION, &c.—The flowers of this species are of the most beautiful ultramarine blue, and the flowers themselves are bell-shaped, almost tubular. The style projects, but it is not near so long as in the previous genus, and the flowers, though larger, not near so numerous; the leaves are handsome, and vary in shape as in the previous genus. It is a native of Siberia, and was introduced in 1827.

3.—ADENOPHORA LILIFOLIA, *Dec.* THE LILY-LEAVED ADENOPHORA.

SYNONYMS.—*A. L. var. suaveolens, Ram.*; *A. L. hybrida campanula lilifolia, Ker.*; *A. complanis, Fisch.*

ENGRAVINGS.—*Bot. Reg. t. 236*; and our *fig. 3, Plate 61*, under

the name of *A. suaveolens*.

SPECIFIC CHARACTER.—Radicke leaves cordate, ovate. Stem-leaves lanceolate, sharply serrated. Flowers in naked panicles.

DESCRIPTION, &c.—This very handsome species has flowers not half as large as the last, but of a very delicate pale blue. The style is about half as long again as the corolla, and the flowers are extremely sweet-scented. Like all the other species of *Adenophora*, though it is a native of Siberia, it is often killed by the spring frosts; but it has been observed, that this only occurs when the plant is in a close, moist situation, as in its native country it is only found on mountains. There are the same peculiarities in the projecting style, and variously-shaped leaves in this species as in the others. It was introduced from Siberia in 1784.

4.—ADENOPHORA DENTICULATA, *Fisch.* THE TOOTHED ADENOPHORA.

SYNONYME.—*Campanula tricuspidata.*

ENGRAVINGS.—*Sweet's Brit. Flow. Gard., t. 116*; and our *fig. 2, Plate 61*.

SPECIFIC CHARACTER.—Stem erect; leaves subovate; root-leaves

cordate, strongly serrated; panicle branched, leafy. Segments of the calyx ovate, acuminate, sharply denticulate; style only just appearing beyond the corolla.

DESCRIPTION, &c.—The flowers of this species are of a very dark blue, and the style is scarcely seen beyond the tubular part of the flower; the panicle is branched, and furnished with numerous bracts. The specific name alludes to the segments of the calyx, which are sharply-toothed; but they are so small, that they would probably not be seen unless attention were directed to them. This species is also a native of Siberia, whence it was introduced in 1822; but like the others, it is very apt to be killed by the frosts in early spring. It blossoms in May, and appears quite hardy when planted in a dry, open situation; it is rather difficult to propagate, as the roots are succulent, and apt to rot if injured in dividing them; and, like all the other species of the genus, it ripens very few seeds, unless care be taken to fertilise the seed-vessel by touching the tip of the stigma with the pollen.

5.—ADENOPHORA CORONOPIFOLIA, *Fisch.* THE BUCK'S-HÖRN ADENOPHORA.

SYNONYME.—*Campanula coronopifolia, R. & S.*

ENGRAVINGS.—*Sweet's Brit. Flow. Gard., t. 104.*

SPECIFIC CHARACTER.—Stem-leaves sub-lanceolate, roughly denticu-

late. Panicle sub-racemose. Lobes of the calyx entire. Style included in the flower.

DESCRIPTION, &c.—This is a dwarf plant, seldom more than six inches high, with rather large purplish flowers, very much resembling those of some of the annual species of *Campanula*; numerous stems rise from the same root, each of which bears several flowers. This species is also a native of Siberia, whence it was introduced in 1822. It is quite hardy, and only requires a dry situation. It is less ornamental than any other genus of the species, but looks well on rockwork, for which it seems admirably adapted from its growing best in a situation that is dry.

6.—ADENOPHORA CORONATA, *Fisch.* THE CROWNED ADENOPHORA.

SYNONYMS.—*A. marsipiflora, Dec.*; *Campanula coronata, Ker.*; *C. linephylla, Pall.*

ENGRAVINGS.—*Bot. Reg. t. 149*; and our *fig. 4, in Plate 61*.

SPECIFIC CHARACTER.—Radicke leaves petiolate, cordate, doubly

serrated; stem-leaves sessile, lanceolate, linear, entire, rigid, brown, hardened, tubulose, equal to and inclosing the dilated base of the stamens.

DESCRIPTION, &c.—This is a very singular species of this genus. It grows from a foot to a foot and a half high, and has a rank, disagreeable smell. The flower is nearly globular, opening at the mouth, and with the



1. *Adenophora nutt. media*. 2. *Adenophora denticulata*. 3. *Adenophora amurensis*. 4. *Adenophora suaveolens*.
 5. *Platycodon grandiflora*. 6. *Wahlenbergia gracilis*. 7. *Gynandrella pentstemonifolia*.



lobes curved back like some of the kinds of heath ; it, however, possesses the peculiarities of the genus. The style projects in the same manner, having at first a club-shaped appearance at the point, which afterwards divides into a three-cleft stigma, the lobes of which are recurved. The leaves vary very much in shape in the same manner, and when the flower is opened, a little cup is found inclosed within the dilated filaments of the stamens, surrounding the base of the style. In some of the species this organ is scarcely visible, but in the present is so conspicuous as to give rise to the specific name. This species, like the others, is a native of Siberia, whence it was introduced in 1815. It is hardier than most of the other kinds, and it does not flower till July.

There are some other species of *Adenophora*, all of which have blue flowers, and are natives of Siberia ; but they are rarely seen in British gardens.

GENUS VII.

SYMPHIANDRIA, *Alph. Dec.* THE SYMPHIANDRIA.*Lin. Syst.* MONADELPHIA PENTANDRIA.

<p>GENERIC CHARACTER.—Calyx five-cleft. Corolla five-lobed at the apex. Stamens five, filaments free, membranaceous, dilated at the base, and ciliated. Style cylindrical, hairy ; stigma three-cleft, lobes</p>	<p>thread-like. Capsule three-celled and three-valved, opening at the base. Seeds ovate, very small, flat, shiny.</p>
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DESCRIPTION, &c.—There is a striking difference between this genus and most of the other genera of the order ; as in this genus the anthers of the stamen combine, though the filaments are free at the base. The name of the genus signifies “ with combined anthers.”

1.—SYMPHIANDICA PENDULA, *Alph. Dec.* PENDULOUS SYMPHIANDICA.

SYNONYME.—*Campanula pendula*, *Bieb.*

ENGRAVINGS.—Sweet's Brit. Flow. Gard., 2d Series, t. 66 ; and our fig. 7, in Plate 61.

SPECIFIC CHARACTER.—Stem branched, pendulose, hairy. Leaves ovate-acute, crenately dentate, velvet-like. Flowers in panicles. Lobes of the calyx lanceolate. Corolla somewhat funnel-shaped, velvety.

DESCRIPTION, &c.—The species of this genus form the connecting link between Campanulacæ and Lobeliacæ ; but I have inserted them here instead of letting them follow Campanula, on account of the position of the plates. The flowers of the present species are of a white or cream colour, and they are rather ornamental than otherwise. The plant is an abundant flowerer, and continues in blossom nearly all the summer. The species is a native of Mount Caucasus, and was introduced in 1824. It is propagated either by dividing the root, or by seed.

S. ARMENA, *Dec.*

This is another species of the same genus, with blue flowers ; it was introduced in 1825.

GENUS VIII.

PLATYCODON, *A. Dec.* THE PLATYCODON.*Lin. Syst.* PENTANDRIA MONOGYNIA.

<p>GENERIC CHARACTER.—Calyx five-cleft. Corolla five-lobed at the apex, large, funnel-shaped. Stamens five, free, filaments broadest at the base. Stigmas five or three. Capsule three—five-celled, dehiscent</p>	<p>by three or five valves at the apex ; cells, when five, alternate, with the calycine lobes and stamens. Seeds ovoid, larger than in any other genus of the order ; shining, but not angular.</p>
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DESCRIPTION, &c.—Only one species has been introduced, and it is a native of Eastern Asia. The name of *Platycodon* is from two Greek words, signifying “ a broad bell.”

1.—PLATYCODON GRANDIFLORA, *A. Dec.* THE LARGE-FLOWERED PLATYCODON.

SYNONYMS.—*Camp. grandiflora, Jacq.*; *C. gentianoides, Lam.*; *fig. 5, in Pl. 61.*
Wahlenbergia grandiflora, Schred. SPECIFIC CHARACTER.—Smooth. Leaves ovate-lanceolate, acuminate,
 ENGRAVINGS.—Sweet's Brit. Flow. Gard. series 2, t. 206; and our sharply serrated. Capsule five-celled.

DESCRIPTION, &c.—The leaves and stems of this plant are of a dull glaucous green; the stems are very slender, and generally one-flowered, but occasionally they become branched, and bear several flowers. The leaves are rather long and sharply serrated. The flowers are of a very dark, rich blue; and they are large and so widely spreading, as to be rather cup-shaped than bell-shaped. They are very handsome, and in fact the whole plant is one of the most showy of the order. It is a native of Siberia, and of course quite hardy; but, though introduced so long ago as 1782, it is rarely seen in gardens: the reason of this is probably, because it is very difficult to propagate, as, if any of the roots should be broken or wounded in dividing them, they discharge so much of the milky juice in which they abound, as very soon to rot the plant. For the same reason, it is very difficult to strike by cuttings, as they also bleed profusely; and it rarely produces perfect seeds. It flowers in July, when the buds, before they expand, bear so strong a resemblance to little balloons, that the plant has been sometimes called the Balloon Plant. It should be grown in a mixture of peat and loam, in a dry situation.

GENUS IX.

WAHLENBERGIA, *Schrad.* THE WAHLENBERGIA.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx three or five-cleft. Corolla three or five lobed at the apex, rarely divided to the middle. Stamens three or five, free; filaments rather broadest at the base. Style, inclosed, plose, but most so towards the upper part. Stigmas two or five. Ovary combined with the tube of the calyx. Capsule two or five-celled, each opening by a valve at the apex. Seeds very numerous, and exceedingly small.

DESCRIPTION, &c.—This genus was named after Dr. Wahlenberg, the author of the *Flora Lapponica*. It consists of several species which were formerly included in the genus *Campanula*, but which have a more spreading limb than the species still included in that genus. The common British ivy-leaved *Campanula* will give an idea of the general shape of the flowers. The following species are those most generally cultivated in gardens.

1.—WAHLENBERGIA GRACILIS, *A. Dec.* THE SLENDER WAHLENBERGIA.

SYNONYMS.—*Camp. gracilis, Forst.*; *C. viniflora, Vent.*; *C. in Pl. 61.*
capillaris, Lodd. SPECIFIC CHARACTER.—Leaves linear-lanceolate, obsolete serrated.
 ENGRAVINGS.—Bot. Mag. t. 691; Bot. Cab. t. 1406; and our *fig. 6*, Stem branched. Flowers solitary, terminal.

DESCRIPTION, &c.—A graceful little plant, with many very slender stems, each about six inches high, and each producing a little panicle of flowers, which continue expanded all the summer. The species is a native of New South Wales, and was introduced in 1794. It is a biennial, requiring the usual treatment of such plants. It is easily propagated by seeds, which it produces in great abundance. It succeeds best when grown in loam or peat; and it is also occasionally propagated by cuttings.

W. GRAMINIFLORA, *Alph. Dec.*

A native of Sicily, introduced in 1816. It is a dwarf plant, with grass-like leaves, and tufts of blue flowers, the filaments of the stamens of which are white, and the anthers yellow. It flowers from May to July.

W. TENUIFOLIA, *Alph. Dec.*

This is probably only a variety of the preceding species, as it only differs in the flowers being violet, and the stems purplish.

W. HEDERACEA, *Alph. Dec.*

A British plant, with blue flowers, well known under the name of the Ivy-leaved Campanula.

W. CAPILLACEA, *Alph. Dec.*

A dwarf plant, with very slender stems and white flowers, the native country of which is not known, but which was first seen in British gardens about 1822. It is quite hardy, and it flowers from May till August.

W. REPENS, *G. Don.*

A very pretty little creeping plant, with white flowers. It is a native of the Canary Islands, whence it was introduced in 1830. The root leaves grow in close tufts, sending up scapes with single flowers, which are produced in great abundance from May till October. It is quite hardy, and admirably adapted for rock-work. It requires very little care in its culture, as it is not easily killed, except by too much moisture; and it is propagated by dividing the root.

GENUS X.

CAMPANULA, *Fuchs.* THE CAMPANULA, OR BELL-FLOWER.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft, with the sinuses usually covered by appendages. Corolla five-lobed or five-cleft at the apex; bell-shaped. Stamens five, with membranous filaments, which are broad at the base. Style covered with tufts of short stiff hair. Stigma very slender; three or five. Ovary entirely inclosed in the tube of the calyx; three or five-celled. Capsule opening on the side, near the base, by small locolical valves. Seeds usually ovate and flattened, sometimes very small.

DESCRIPTION, &c.—This is a very extensive genus, comprising more than a hundred species, which have been divided into two sections; namely, those which have the openings in the calyx furnished with appendages, and those which have not. The plants in the first section, which is called *medium*, from the specific name of the Canterbury Bell, have their capsules opening always at the base, where the covering is thinnest, by little valves, which appear to have been accidentally torn in the middle of each cell. The plants in the second section, which is called *Eucodon*, from two Greek words signifying a true bell, have their capsules three-celled, and opening by side valves, which are sometimes at the base and sometimes at the apex.

SECTION 1.—MEDIUM.

Sinuses of the calyx covered by reflexed appendages. Capsule three or five-celled, opening by valves at the base.

§. 1.—*Capsule five-celled. Stigma five. Stems many-flowered. Radicle leaves with long petioles.*

1.—CAMPANULA MEDIA, *Lin.* THE CANTERBURY BELL.

ENGRAVING.—Our fig. 1, in Plate 63.

SPECIFIC CHARACTER.—Stem erect; leaves sessile, ovate lanceolate; crenately-toothed; calycine lobes ovate, acuminate, with large appendages, very much reflexed but one half shorter than the lobes; corolla campanulate, inflated.

DESCRIPTION, &c.—This well-known and very handsome flower is, as is well known, a biennial, requiring to be sown one year and flowering the next. It is quite hardy, and will grow in any common garden soil to the height of from one to four feet. The stem is branched; the whole plant is hairy. The flowers are numerous, large, and disposed in racemes; their colour varies from blue to purple and white, and they are sometimes double

of all these colours. The Canterbury Bell flowers from July to September; it is a native of Germany, and of nearly the whole of the south and east of Europe, with part of Asia. It was sent to this country before 1597, and it has been a common garden flower ever since; as, although biennials are more apt to be lost than most other kinds, it produces such abundance of seeds, which it ripens freely, as to render its preservation easy.

2.—*CAMPANULA LACINIATA*, *And.* THE CUT-LEAVED BELL-FLOWER.

SYNONYME.—*C. Andrewsia*, *Alph. Dec.*

ENGRAVING.—*Bot. Rep.* t. 385.

SPECIFIC CHARACTER.—Plant hairy; radicle leaves deeply pinna-

tifid; upper leaves roundish or subcordate; flowers disposed in loose racemes; corolla tubular.

DESCRIPTION, &c.—This is a very elegant species, with pale blue flowers, which are white or yellow at the base, and are disposed in loose elongated leafy racemes. The stem is branched, and the lower leaves are deeply cut. The whole plant is hairy, except the flowers, which are quite smooth. The plant grows from one to two feet high, and it flowers from May to August. It is a native of the Grecian Isles, where it is generally found growing on shady rocks, and it was introduced in 1790. It is quite hardy in British gardens; and, being a perennial, is propagated by dividing the roots.

§. 2.—*Capsules three-celled. Stigmas three. Flowers usually solitary.*

3.—*CAMPANULA SARMATICA*, *Bieb.* THE POLISH BELL-FLOWER.

SYNONYME.—*C. Botanicifolia*, *Marsch.*

ENGRAVINGS.—*Bot. Reg.* t. 237; and our *fig.* 5, in Plate 63.

SPECIFIC CHARACTER.—Stem erect, simple; leaves downy, lower

ones cordate, lanceolate, petiolate; upper ones oblong, sessile; flowers nodding, hairy; ovary woolly.

DESCRIPTION, &c.—A very beautiful species, growing about two feet high; the stem without branches. The flowers are of a pale blue, and form a long loose raceme. The leaves are covered with a whitish wool. The species is a native of Mount Caucasus, where it is found in stony places, and was introduced in 1803. It is a hardy perennial, and is propagated by dividing the roots.

4.—*CAMPANULA PUNCTATA*, *Willd.* THE SPOTTED CAMPANULA.

SYNONYME.—*C. trachelium*, *Thun.*

ENGRAVINGS.—*Bot. Mag.* t. 1723; and our *fig.* 6, in Plate 63.

SPECIFIC CHARACTER.—Hairy; radicle leaves on footstalks, ovate, acutely serrated; flowers nodding, large, spotted on the inside.

DESCRIPTION, &c.—This very singular plant is remarkable for its long tubular flowers, which are produced on separate footstalks, and are of a dingy white, spotted with red on the inside. The species is a native of Siberia, where it grows in the open mountainous country. Its flowers do not expand till autumn, but they frequently continue all the winter, and sometimes remain till February or March. It is a perennial, and may be propagated either by dividing its roots, or by seed. It was introduced in 1813.

5.—*CAMPANULA BARBATA*, *Lin.* THE BEARDED CAMPANULA.

SYNONYME.—*C. Allionii*, *Vill.*; *C. alpestris*, *All.*; *Rapunculus montanis*, *Bauh.*

ENGRAVINGS.—*Bot. Mag.* t. 1258; *Bot. Cab.* t. 788; *Sweet's Brit. Fl. Gard.*, 2d Series, t. 409; and our *fig.* 4, in Plate 63.

SPECIFIC CHARACTER.—Stems nearly simple, terete, pilose. Leaves

villous, nearly entire; radicle leaves crowded, lanceolate; cauline leaves few, ligulate. Racemes loose, few flowered; calyx pilose, with triangular acuminate lobes; appendages of the sinuses of the calyx ovate, one half shorter than the lobes; corollas bearded in the mouth.

DESCRIPTION, &c.—This very beautiful plant varies exceedingly when it is raised from seeds. The usual colour of the flowers is a milk white or pale blue, but sometimes they are of the richest dark blue that can be



1. *Campanula medium*—3. *Campanula Macrophylla*—4. *Campanula barbata*—5. *Campanula punctata*.
 5. *Campanula Trachelium*—2. *Campanula Alpina*.

conceived. The species is a native of the Alps, whence it was introduced in 1775. It is quite hardy in British gardens, if grown in a dry soil and in an open situation, but it is easily killed by damp. It is admirably adapted for rock-work. It takes its name of bearded from the hair inside the corolla.

6.—*CAMPANULA MACROPHYLLA*, Sims. THE LARGE-LEAVED CAMPANULA.

SYNONYMS.—*C. alliarifolia*, Rœm. et Schultz; *C. lamifolia*, Bieb.

ENGRAVINGS.—Bot. Mag. t. 912; and our fig. 3, in Plate 62.

SPECIFIC CHARACTER.—Leaves cordate or hastate; flowers secund.

DESCRIPTION, &c.—This very handsome species has large white flowers, which are secund, that is, growing all on one side of the stem. The plant is a biennial, with a tap root. It is quite hardy, and flowers in July and August. It is a native of Mount Caucasus, whence it was introduced in 1803. It will grow in any common garden soil where there is plenty of room, but it requires considerable space. The milk of the plant is greenish, and very glutinous.

7.—*CAMPANULA ALPINA*, Jacq. ALPINE BELL-FLOWER.

SYNONYME.—*Trachilium pumilum*, Chus.

ENGRAVINGS.—Bot. Mag. t. 957; and our fig. 2, in Plate 63.

SPECIFIC CHARACTER.—Stem nearly simple, furrowed. Leaves linear-lanceolate, repandly-crenate, woolly: radicle ones crowded, narrowed

at the base. Flowers pyramidally racemose; calycine lobes long, acuminate, woolly; appendages of sinuses ovate-acute, woolly, much shorter than the lobes. (*G. Don.*)

DESCRIPTION, &c.—The flowers of this very pretty little plant closely resemble those of the last species, except that they are not bearded, and that the colour is always blue or violet. It is a native of the Alps of Switzerland, whence it was introduced in 1779. It seldom grows above six inches high, and it is admirably adapted for rock-work, as it requires a dry situation fully exposed to the sun and air.

SECTION 2.—EUCODON.

Sinuses of calyx not furnished with appendages; capsule three-celled, dehiscing laterally by valves, sometimes at the base, and sometimes at the apex.

§. 1.—*Capsules erect, dehiscing at the base; flowers sessile, capitate, or spicate.*

8.—*CAMPANULA SPECIOSA*, Rœm. et Schultz. SHOWY BELL-FLOWER.

SYNONYMS.—*C. glomerata*, β *daburica*, Ker; *C. Agregata*, Willd.

ENGRAVINGS.—Bot. Mag. t. 2649; Bot. Reg. t. 620; and our fig. 3, Plate 63.

SPECIFIC CHARACTER.—Dowdy; stems terete. Leaves serrulated;

radicle ones ovate, acute. Flowers glomerate, large, showy; bracts ovate, acuminate; calycine lobes acuminate, twice shorter than the corolla, which is funnel-shaped. (*G. Don.*)

DESCRIPTION, &c.—The stem of this Campanula is square, and about two feet high; two of the sides are deeply grooved, and covered with hairs pointing downwards. The radicle leaves have long footstalks, and are quite cordate; the stem leaves are sessile. The flowers are very handsome, being of a deep purple, and gathered together in clusters at the points of the shoots. The species is a native of Siberia, and it is quite hardy in British gardens; it was introduced in 1818. It requires no particular care in its culture, though it varies exceedingly according to the soil and situation in which it is grown. In a very rich damp soil, the leaves become larger and the flowers paler, but not nearly so handsome as in common garden mould; and in very poor soils the flowers are produced singly instead of being in clusters.

9.—*CAMPANULA THYRSOIDEA*, *Lin.* THYRSOID BELL-FLOWER.

SYNONYMS.—*Trachilium thyrsoides*, *Clus.*; *Trachilium spicatum*, *Park*; *Echium montanum*, *Dal.*; *Echium Alpinum*, *Bauh.*

ENGRAVING.—*Bot. Mag.* t. 1290.

SPECIFIC CHARACTER.—Plant pilose. Stem furrowed. Leaves entire,

pilose; lower ones lanceolate, obtuse; cauline ones linear-lanceolate, acute. Flowers disposed in a dense, pyramidal spike; calyx with a glabrous tube, and linear-lanceolate ciliated lobes; corolla oblong, doubly longer than the calycine lobes; style exserted; capsule spherical.

DESCRIPTION, &c.—A very singular species, with cream-coloured hairy flowers growing together in a clustered mass so as to form a long, thick, and pyramidal spike of flowers. This species is a native of stony places on the Alps; and, contrary to the general habit of Alpine plants, it grows to a greater height, and produces finer flowers, in a shady damp situation, than in places where the soil is dry and the plants are exposed to the sun. It was introduced in the year 1785, and, being a biennial, it is always propagated by seeds. It generally grows about two feet high, and produces a spike of flowers which is often twelve inches long and several inches thick at the base. This plant is a favourite in France, into which country it was introduced in the reign of Henry IV.

§. 2.—*Capsules drooping, dehiscing at the base; lobes of calyx entire; flowers pedicellate.*

10.—*CAMPANULA MACRANTHA*, *Lin.* THE LARGE-FLOWERED CAMPANULA.

SYNONYME.—*C. latifolia*, *γ*, *Sims.*

ENGRAVING.—*Bot. Mag.* t. 2553, and our *fig.* 1, in Plate 62.

SPECIFIC CHARACTER.—Stem and leaves rather pilose; leaves dentated. Calyx glabrous; corollas large; fruit nodding.

DESCRIPTION, &c.—The stem of this species grows three or four feet high. It is straight, without branches, and round; the leaves are alternate and pubescent on both sides. The peduncles are one-flowered; erect while carrying the blossom, and drooping with the fruit. The lower peduncles are sometimes lengthened into slender branches bearing flowers. This species is a hardy perennial, a native of Russia; and it blossoms in June and July. It was introduced in 1822. It will grow in any common garden soil, and does not require any peculiar care in its culture.

11.—*CAMPANULA RUTHENICA*, *Mars.* ORIENTAL CAMPANULA.

SYNONYMS.—*C. Rapunculoides*, *Pall.*; *C. Orientalis*, *Tourne.*

ENGRAVING.—*Bot. Mag.* t. 2653.

SPECIFIC CHARACTER.—Scabrous; stems simple. Leaves serrulated, ovate, acuminate, dark green above, pale beneath; radicle leaves

cordate, petiolate; superior leaves stem-clasping. Flowers numerous, small, disposed in long racemes; calycine lobes acuminate, four times shorter than the corolla, which is funnel-shaped. (*G. Don.*)

DESCRIPTION, &c.—A very elegant plant with small flowers, which are dark on the outside and lighter-coloured within. They are disposed in a loose spike-like raceme, which is of considerable length. The species is a native of the dry hills in the neighbourhood of Mount Caucasus, whence it was introduced in 1803.

12.—*CAMPANULA RAPUNCULOIDES*, *Lin.* RAMPION-LIKE BELL-FLOWER.

ENGRAVING.—*Bot. Mag.* t. 1369.

SPECIFIC CHARACTER.—Stems rather scabrous. Leaves scabrous, ovate, acuminate; radicle ones petiolate, cordate, crenulated; cauline ones serrulated; flowers disposed in long, spicate racemes, solitary;

calyx rather scabrous, with linear-lanceolate lobes, which are afterwards reflexed; corolla funnel-shaped, four times longer than the calycine lobes. (*G. Don.*)

DESCRIPTION, &c.—This is a British species, and it is remarkable for the beauty of its flowers. It is only found in Yorkshire and in Scotland; but in the latter country, near Kirkcaldy, it is so abundant as to be a troublesome weed in corn-fields.



Campanula Macrantha. 2. *Campanula lactiflora*. 3. *Campanula strepera*. 4. *Campanula rotunda*
 5. *Campanula collina*. 6. *Campanula trachelium*

13.—*CAMPANULA UCRANICA*. THE UKRAINE CAMPANULA.

SYNONYMS.—*C. infundibuliformis*, *Sims.*; *C. Lamiifolia*, *Horne*; *C. crenata*, *Lin*; *C. neglecta*, *Bess.*

ENGRAVINGS.—*Bot. Mag.* t. 2632; and our *fig.* 6, in Plate 62.

SPECIFIC CHARACTER.—Leaves ovate, cordate, crenate, acuminate,

petiolate, rough. Stem slightly branched. Flowers in a loose raceme, nearly all turned the same way; peduncles solitary, one-flowered, nodding; corolla funnel-shaped, half five-cleft, segments revolute.

DESCRIPTION, &c.—A very handsome species, which was introduced in 1817 from Vienna. It is said to be a native of the Ukraine. It is quite hardy. This is one of the species with creeping roots, which grow freely as long as they are suffered to remain in one place, but which are very difficult to remove, on account of the danger of wounding the fleshy roots.

14.—*CAMPANULA COLLINA*, *Bieb.* THE HILL CAMPANULA.

SYNONYME.—The sage-leaved Bell-flower.

ENGRAVINGS.—*Bot. Mag.* t. 927; and our *fig.* 5, in Pl. 62.

SPECIFIC CHARACTER.—Stems simple; lower leaves on long petioles; ovate-oblong, crenulated; middle ones lanceolate; upper

ones linear-acuminate; flowers few, nearly secund, disposed in a long raceme; calyx lobes erect, lanceolate, acuminate, much shorter than the corolla, which is funnel-shaped.

DESCRIPTION, &c.—This species is remarkable for the reflexed segments of the corolla. The flowers are purple; and the tube of the corolla is cup-shaped, and nearly hemispherical, with the segments rolled back, and so hairy on the inside as to deserve the epithet of bearded better than the species to which the specific name of *barbata* is applied. The species is a native of Mount Caucasus; but as it is an Alpine plant, and covered with snow during winter, it does not appear sufficiently hardy to bear severe frosts without protection.

15.—*CAMPANULA PULLA*, *Lin.* THE DARK-COLOURED CAMPANULA.

SYNONYMS.—*Campanula alpina*, *Bauh.*; the Austrian Bell-flower; the Russet Bell-flower.

ENGRAVINGS.—*Bot. Mag.* t. 2492; *Lodd. Bot. Cab.* t. 554; *Sweet's Brit. Flow. Gard.* 2d ser., t. 80; and our *fig.* 4, in Pl. 62.

SPECIFIC CHARACTER.—Stems dwarf, one-flowered; leaves glabrous, crenately-toothed; lower ones on short petioles, ovate-roundish; upper ones sessile; ovate-acute; segments of the calyx acuminate, erect, shorter than the corolla, which is campanulate.

DESCRIPTION, &c.—This is a rare Alpine plant, a native of Austria, remarkable for its delicacy and beauty. It resembles a little blue bell in the form of its flowers, but their colour is a dark purple, with a white rib at the point of junction between the petals; as, though the flowers of the *Campanulas* are called monopetalous, they are, in fact, composed of five petals, adhering together, which may be easily separated by a pin. This species flowers in July and August. It is a hardy perennial, and requires no other culture than planting it in common garden soil. From its dwarf stature, however, which rarely exceeds three inches, it is best adapted for rock-work. It was introduced in 1779.

§ 3.—*Capsules erect, dehiscing at the base. Flowers pedicellate.*

16.—*CAMPANULA LACTIFLORA*, *Mars.* THE MILK-FLOWERED CAMPANULA.

SYNONYMS.—*C. hispida*, *Fisch.*; *C. volubilis*, *Willd.*; Grey-panicked Bell-flower.

ENGRAVINGS.—*Bot. Reg.* t. 241; *Bot. Mag.* t. 1973; and our *fig.* 2, in Pl. 62.

SPECIFIC CHARACTER.—Stem branched; leaves sessile, ovate-lanceolate, acutely serrated; flowers in loose panicles; calyx lobes very broad, serrulated, acute, twice shorter than the corolla; capsule ovoid (*G. Don*).

DESCRIPTION, &c.—This is a very handsome species, a native of Mount Caucasus. The stems frequently grow four feet high, and the flowers are generally produced in a leafy panicle. They are rather large, and open widely, having only a very short tube. The species is hardy, but it requires a rich soil to grow it to perfection;

but when it thrives, it produces an immense quantity of flowers, which continue a long time on the plant. From its height and branching habit, it is best suited to a shrubbery. It was introduced in 1814.

17.—*CAMPANULA GARGANICA*, *Ten.* THE GARGANIAN BELL-FLOWER.

SYNONYMS.—*C. Elatines*, *Pet.*; *C. saxatilis*, *Till.*; the Harebell of St. Angelo.

ENGRAVINGS.—Sweet's Brit. Flow. Gard., 2d. ser., t. 252; Bot. Reg. t. 1768; and our fig. 5, in Pl. 64.

SPECIFIC CHARACTER.—Stem diffuse. Leaves somewhat kidney-shaped, cordate, sharply serrated. Peduncles frequently two-flowered. Segments of the calyx lanceolate, acuminate, dentate. Corolla rotate, or with a very short tube.

DESCRIPTION, &c.—This very pretty little plant is a perennial species, which begins to flower in June, and continues producing a succession of blossoms nearly all the autumn. It was discovered by Professor Tenore on Mount St. Angelo, (the ancient name of which is Garganus,) in the kingdom of Naples. The plant, notwithstanding its southern origin, appears to be hardy in British gardens, with the exception of being easily injured by too much wet. It is admirably adapted for rock-work, or for a balcony, or window, and it thrives best in a mixture of peat and loam. When it is grown in a pot for a balcony or window, the pot containing it should be placed on another pot turned upside down so as to admit of the flowers hanging down on every side. The pendent stems of this plant make it very suitable for rock-work. It was introduced in 1832.

18.—*CAMPANULA PORTENSCHLAGIANA*, *Ram. et Schult.* THE DALMATIAN OR WALL CAMPANULA.

SYNONYME.—*C. muralis*, *Port.*

ENGRAVINGS.—Bot. Reg. t. 1995, and our fig. 4, in Pl. 64.

SPECIFIC CHARACTER.—Stem sub-erect. Leaves petiolate; rotund-

dately cordate; acutely dentated. Flowers racemose; the lobes of the calyx subulate. Corolla somewhat funnel-shaped.

DESCRIPTION, &c.—This species is a native of walls and rocks in Dalmatia, whence it was introduced about 1836. It is hardy in British gardens in all situations where it is not likely to be injured by damp. Like the preceding species, it is well adapted for rock-work, but it is of more erect growth. It is very well suited for balconies or windows. In a wild state, the stems become tough and woody near the root.

19.—*CAMPANULA FRAGILIS*, *Cyrril.* THE BRITTLE CAMPANULA.

SYNONYMS.—*C. diffusa*, *Vahl*; *C. cochlearifolia*, *Dec.*; *C. crassifolia*, *Nees.*; *C. Cavolini*, *Ten.*; *C. fragilis*, *B.*, *hirsuta*, *Lindl.*

ENGRAVINGS.—Bot. Reg. t. 1738, and our fig. 6, in Pl. 64.

SPECIFIC CHARACTER.—Stem ascending, diffusely branching. Radical

leaves on long petioles; cordately rotund; obtusely crenate. Stem leaves very small, ovate-lanceolate. Flowers in panicles. Lobes of the calyx linear-lanceolate. Sepals nearly as long as the petals. Style exserted. Capsule ovoid.

DESCRIPTION, &c.—This is one of the most beautiful of all the Campanulas. The flower is large, and nearly flat, having only a little hollow in the middle. The colour is a most beautiful blue, and it grows in dense tufts in its native country, hanging down from the face of limestone rocks and flowering all the summer. It is a native of the south of Italy, particularly in the neighbourhood of Naples, the Isle of Capri, and elsewhere in Calabria. In many places it grows as much as 3,000 feet above the level of the sea. It was introduced in 1834. It requires a slight protection during winter, as it is apt to damp off if it should have too much wet.

20.—*CAMPANULA PYRAMIDALIS*, *Cam.* THE PYRAMIDAL CAMPANULA.

SPECIFIC CHARACTER.—Glabrous. Leaves glandularly toothed; lower ones petiolate, ovate-oblong, somewhat cordate; cauline leaves sessile, ovate-lanceolate. Flowers numerous, pyramidally racemose.

Segments of the calyx acuminate, spreading. Capsule spheroid, deeply furrowed. (*G. Don.*)

DESCRIPTION, &c.—This is one of the largest and handsomest of the Campanulas. It grows four or five feet high, with numerous flowers, which branch out so as to form a pyramidal raceme. The root is large and turnip-



1. *Campanula peregrina* — 2. *Campanula persicifolia* var. *Maiana* — 3. *Campanula Carpatica* — 4. *Campanula Pastorschlogiana*
 5. *Campanula garganica* — 6. *Campanula fragilis*

shaped, or divided into numerous fleshy tubers like that of the Dahlia. The species has blue flowers; but there is a variety, the flowers of which are white. A native of Carniola and Dalmatia. Introduced in 1596. It is a very handsome plant either for pots or the open garden.

21.—*CAMPANULA VERSICOLOR*, *Sib. et Smith.* THE PARTY-COLOURED BELL-FLOWER.

SYNONYMS.—*C. planiflora*, *Willd.*; *C. Willdenowiana*, *R. et S.*; *C. multiflora*, *Dec.*

ENGRAVING.—Bot. Rep. t. 396.

SPECIFIC CHARACTER.—Glabrous. Stem ascending. Leaves serrated. Radical leaves petiolate, ovate, acute, rather cordate. Cauline leaves

on short petioles, ovate, lanceolate, acuminate. Flowers disposed in long spicate racemes. Segments of the calyx acuminate, spreading or reflexed, shorter than the corolla. Style exerted. Capsule spheroid. (*G. Don.*)

DESCRIPTION, &c.—This species has very much the habit of *C. pyramidalis*, but the flowers are nearly rotate; they are of a deep violet colour at the bottom, nearly white in the middle, and deepening into violet again at the tips of the segments. It is a native of Greece, whence it was introduced in 1788.

22.—*CAMPANULA TENORII*, *Mor.* PROFESSOR TENORE'S CAMPANULA.

SYNONYMS.—*C. corymbosa*, *Ten.*; *C. Rosani*, *Moricand.*; *C. Thomasi*, *Hort.*; *C. versicolor*, *Guss.*

SPECIFIC CHARACTER.—Stem ascending. Leaves coriaceous; radical

ones ovate-oblong, acutely serrated on long petioles; cauline leaves ovate, acute, coarsely serrated. Flowers racemose. Segments of the calyx linear, spreading; shorter than the corolla.

DESCRIPTION, &c.—This plant bears a very strong resemblance at first sight to *C. fragilis*. The corolla has a white centre and blue segments. It is a native of the kingdom of Naples, and was introduced about 1830. It grows from six inches to a foot high.

§ 4.—Capsule erect, dehiscing laterally towards the apex. Flowers pedicellate.

23.—*CAMPANULA PEREGRINA*, *Lin.* THE WANDERING BELL-FLOWER.

SYNONYMS.—*C. lanuginosa*, *Lam.*; *C. hirsutissima*, *Guss.*; Rough-leaved Bell-flower; Foreign Bell-flower.

ENGRAVINGS.—Bot. Mag., t. 1257, and our fig. 1, in Pl. 64.

SPECIFIC CHARACTER.—Plant hispid. Stem simple, many-flowered,

angular; leaves crenated; lower ones obovate; upper ones ovate, acute. Flowers disposed in a spicate raceme; lobes of the calyx acuminate, nearly entire, rather shorter than the corolla, which is spreading. Capsule ovoid. (*G. Don.*)

DESCRIPTION, &c.—This is a very handsome species, the flowers of which are almost flat. It grows on a tall stem, with a very long raceme of flowers, which keep opening for many weeks in succession like those of *C. pyramidalis*, but it differs from that plant in being hairy and having only a simple stem of flowers instead of a branched one. It is a hardy biennial, which requires the usual treatment of plants of that kind. It received its odd name of *peregrina*, which signifies "wandering," from its being first supposed to be a native of the Cape of Good Hope, and afterwards of Syria, from its seeds having been accidentally mixed with the seeds of plants from those countries. Its real native country is, however, unknown; and the first traces we have of it are its coming up in the Botanic Garden at Upsall, among a number of young plants produced by foreign seeds, about the year 1794.

24.—*CAMPANULA PLANIFLORA*, *Lam.* THE FLAT-FLOWERED CAMPANULA.

SYNONYMS.—*C. nitida*, *Ait.*; *C. Americana*, *Mill.*

SPECIFIC CHARACTER.—Quite glabrous. Stems simple. Leaves sessile, coriaceous, shining; radical ones crowded, obovate, crenulate;

stem-leaves linear-lanceolate, acute. Segments of the calyx ovate, erect, much shorter than the corolla, which is nearly rotate.

DESCRIPTION, &c.—There are two varieties of this species, one with blue flowers, and the other with white. The flowers in both cases are nearly flat. The leaves are glossy. A native of America, introduced in 1731.

25.—*CAMPANULA CARPATICA*, *Lin.* THE CARPATHIAN BELL-FLOWER.

SPECIFIC CHARACTER.—Leaves glabrous, cordate, serrated, petiolate; peduncles elongated; calyx reflexed, glutinous.

ENGRAVINGS.—*Bot. Mag.* t. 117; and our *fig.* 3, in Pl. 64.

DESCRIPTION, &c.—This species bears considerable resemblance to the annual *Campanulas*. It is a native of the Carpathian Mountains in Hungary, and it was sent to England by Baron Jacquin in 1774. It is a weak, low-growing plant, with large, showy flowers, and quite hardy. It is propagated by dividing its roots in autumn.

26.—*CAMPANULA PERSICIFOLIA*, *Lin.* THE PEACH-LEAVED CAMPANULA.

SYNONYMES.—*C. decutrens*, *Bull.*; *C. speciosa*, *Gil.*; *C. amygdalifolia*, *Salisb.*

ENGRAVINGS.—*Bot. Mag.* t. 397; and our *fig.* 2, in Pl. 64.

VARIETIES.—There are eight varieties of this species, but the most interesting is that called *maxima*, which is figured in Plate 64. The

double-flowered varieties, both of the blue and white, are more common than those with single flowers.

SPECIFIC CHARACTER.—Radical leaves obovate; stem-leaves lanceolate-linear, slightly serrated, sessile, remote.

DESCRIPTION, &c.—This species is common in every part of Europe, from the North of Sweden and Siberia to the South of Italy and Constantinople. It is generally found in hilly, shady places, as for example, in Scotland, in the woods near Cullen.

The variety *maxima* was obtained from South Carolina in 1791, but it is not known whether it is a native of that country, or whether it was raised accidentally from the seed of an imported plant of the species. The single state of the species is very rare, except where it is found wild, as only the double and large-flowered varieties are cultivated in gardens. The plant is extremely easy of cultivation; and indeed where it is left for several years undisturbed, it increases so rapidly by its creeping roots as to become almost a weed. In a rich soil which is somewhat moist, the large-flowered variety will acquire a height of three or four feet. It flowers in August and September, and produces such an abundance of blossoms as to have a magnificent appearance.

OTHER SPECIES OF CAMPANULA.

These are extremely numerous, but they are all natives of Europe, with very few exceptions. The following are a few of the most remarkable.

C. LYRATA, *Dec.*

This species has blue flowers and lyre-shaped leaves. It is a native of Greece, and has been long common in British gardens, but the exact year of its introduction is unknown.

C. MOLLIS, *Dec.*; *Bot. Mag.*, t. 404.

This very pretty little plant is extremely valuable for rock-work, from the great length of time that it continues producing a succession of flowers. As soon as the flowers expand, the plant throws out a little side-shoot from the same stem, with a little flower-bud upon it, which is ready to expand as soon as the first flower falls off. This plant has been found wild in three different countries, namely Syria, Sicily, and Spain, and it was sent from the latter country to England in 1788. It is easily propagated, as it is one of the few *Campanulas* which ripen abundance of seed. It requires a slight protection during winter, and is easily killed by too much moisture.

C. SIBIRICA, *Lin.*

This very handsome plant is common both in Siberia and in the mountainous parts of Austria. It has crisp leaves and dark purple flowers, which have very long tubes, with a short limb; they are disposed in panicles.

There are two varieties, one with white flowers, and another the flowers of which are of a pale blue. The plant is generally considered to be a biennial, but it will often live three or four years before it flowers, though it always perishes after ripening its seeds. It was introduced in 1783. It flowers from the beginning of June till the latter end of August, and is always propagated by seeds, which it ripens in abundance.

C. AGGREGATA, *Lodd. Bot. Cab.*, t. 505.

This is not a very handsome species; as though it has a small cluster of dark blue flowers at the extremity of the shoot, the side flowers are quite thin and scattered, and very different from those of *C. speciosa*, figured in Pl. 62, with which it is sometimes confounded.

C. CERVICARIA, *Lodd. Bot. Cab.*, t. 452.

A species with undulated leaves and blue flowers. A native of Germany; introduced in 1768.

C. EXCISA, *Lodd. Bot. Cab.*, t. 561.

This species takes its name from its cut flowers, the petals of which are cleft more than half-way down, and the divisions rolled together in such a curious way as to give them a remarkable scooped-out appearance. The stems of this plant are remarkably slender, only growing about four inches high, and the leaves are awl-shaped. It is a native of the Alps in Switzerland, whence it was introduced in 1816. It is quite hardy, and should be grown in light loamy soil. It is propagated by dividing the roots in spring.

C. SCHEUCHZERI, *Lodd. Bot. Cab.*, t. 485.

This very beautiful little species closely resembles the little hare-bell of the English fields, (*Campanula rotundifolia*), but the flowers are larger, and the flower-stalks, instead of being naked, are furnished with numerous linear leaves. It is a native of the Alps in Switzerland, and it was introduced in 1813.

There are numerous other species, but they are not common in British gardens.

GENUS XI.

TRACHELIUM, *Lin.* THE THROATWORT.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx superior, five-cleft. Corolla funnel-shaped, tube long, limb five-lobed. Filaments not dilated at the base. Style one, stigma globose. Capsule three-celled, opening at the base by small lateral pores.

DESCRIPTION, &c.—There is only one species of this genus common in British gardens. The word *Trachelium* is derived from *trachea*, in allusion to the supposed efficacy of the plant in all diseases of the throat. The English name throatwort has also the same origin.

1.—TRACHELIUM CÆRULEUM, *Lin.* THE BLUE THROATWORT.

SYNONYMES.—*T. azureum*, *Gowan.*; *Trachelio azuro*, *Pon.*; *Valeriana cerulea*, *Barr.*; *Rapunculus valerianoides*, *Morr.*; *Cervicaria valerianoides*, *Bauh.*

ENGRAVING.—*Bot. Reg.* t. 72.

SPECIFIC CHARACTER.—Stem branched, erect. Leaves ovate, serrated, flat. Flowers in terminal corymbs furnished with numerous bracteoles.

DESCRIPTION, &c.—This species is a biennial plant growing two or three feet high, and producing numerous corymbs of small purplish flowers. The colour of the flowers, however, varies very much in the varieties of this species being sometimes decidedly blue and of various shades, from a very dark to a very light tint; at other times purple, and at others quite white. It is a native of the banks of the Mediterranean, and some other parts of Italy and Spain, but it has never been found growing wild farther north than Rome. It was introduced in 1640.

CHAPTER XXVIII.

LOBELIACEÆ.

CHARACTER OF THE ORDER.—Calyx superior, five-toothed, or five-parted, seldom entire, with the tube adnate to the ovary at the base. Corolla monopetalous, irregular, inserted in the calyx, five-lobed, or deeply five-cleft. Stamens five, inserted into the calyx alternately with the lobes of the corolla; anthers cohering; pollen oval. Ovary inferior, with from one to three cells, but usually of

two cells. Ovula very numerous, attached to the axis or parietes of the fruit. Style simple; stigma usually two-lobed, surrounded by a cup-like fringe. Fruit capsular or baccate, one-two-celled, rarely three-celled, many-seeded, dehiscing at the apex. Seeds attached to the axis or parietes of the fruit. Embryo straight, in the axis of fleshy albumen, with the radicle pointing to the hilum. (*G. Don.*)

DESCRIPTION, &c.—The order Lobeliaceæ was formerly included in Campanulaceæ, but it is distinguished from that order by the adhering of the anthers together, and the irregular shapes of the flowers. It also differs in the acidity of its milk, which in all the species is dangerous, and in some a deadly poison. The stigma is surrounded by hairs like that of the Campanulaceæ. The flowers of all the plants belonging to this order are ornamental; and they are of various colours, blue, white, scarlet, purple and yellow. The leaves are alternate without stipules, and the order contains both herbaceous plants and shrubs. There are numerous genera, but only two or three of them contain hardy perennial plants.

GENUS I.

LOBELIA, *Pohl.* THE LOBELIA.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Tube of the calyx adhering to the ovary. Limb free, five-cleft. Corolla irregular, tubular. Tube cleft on the upper side, thickened or ventricose at the base. Limb five-parted, bilabiate; the upper lip in two narrow segments; the lower lip in

three roundish segments. Filaments of the stamens combined in the upper part; anthers cohering, and generally bearded. Capsule oval; two-celled; two-valved; many-seeded; opening at the apex.

DESCRIPTION, &c.—This genus was named in honour of Mathew Lobel, the author of several works on botany, who was born at Lisle, in 1538, and was afterwards physician and botanist to James I. The genus is easily known by its irregular bilabiate flowers. All the species are ornamental, and most of them are natives of America.

1.—LOBELIA KALMII, *Lin.* KALM'S LOBELIA.

ENGRAVING.—Bot. Mag. t. 2238; and our *fig. 4*, in Pl. 67.

SPECIFIC CHARACTER.—Stem erect, extremely slender, simple; radical leaves spatulate; stem-leaves linear, very slightly denticu-

lated; flowers in a loose raceme, alternate, and very distant from each other on the rachis.

DESCRIPTION, &c.—This plant springs from a tuft of small spatulate leaves, and its extremely slender stalk frequently rises a foot and a half high. It bears but few flowers, which have a straggling appearance, being very distant from each other on the flower-stalk; but the flowers are pretty in themselves when closely examined. The plant is a native of North America, being found in Canada, Carolina, and New York. It was introduced in 1820. It is sometimes called an annual in the catalogues, but it is a true perennial, and when once planted, will continue sending up fresh flower-stems from the root, every spring, for a great number of years.



1. *Lobelia fulgens*. 2. *Lobelia speciosa*. 3. *Lobelia colorata*. 4. *Lobelia pectorata*.

2.—LOBELIA PYRAMIDALIS, Wall. THE PYRAMIDAL LOBELIA.

SYNONYMS.—*L. stimulans*, Ham.; the branchy *Lobelia*.

ENGRAVING.—Bot. Mag. t. 2387.

SPECIFIC CHARACTER.—Smooth. Leaves lanceolate, serrulated,

acuminated; upper ones linear, attenuated. Racemes leafy, paniculated. Segments of the calyx subulate, equal in length to the corolla. Stem erect, branchy.

DESCRIPTION, &c.—This is a tall-growing plant, with erect, smooth stems, three or four feet high. The stems and leaves are rather ornamental, as the stems are lilac, and the leaves are long and slender, and delicately serrated; but the flowers are not very handsome, and they are nearly hidden by their long bracts, and the long slender segments of the limb of the calyx. It is a native of Upper Nepal, and it was introduced in 1809. It requires a slight protection during winter.

3.—LOBELIA FULGENS, Pursh. THE REFULGENT LOBELIA.

ENGRAVINGS.—Bot. Reg. t. 165; Bot. Rep. t. 659; and our fig. 1, in Pl. 65.

elongately lanceolate, attenuated, nearly entire. Raceme many-flowered; style and stamens longer than the corolla.

SPECIFIC CHARACTER.—Simple, erect, somewhat pubescent. Leaves

DESCRIPTION, &c.—This very splendid species is a native of Mexico, and was introduced from that country by Messrs. Humboldt and Bonpland. This species very nearly resembles *Lobelia splendens*, but it differs in being covered all over with a fine close down, and in the flowers being somewhat lighter, and of a more glowing scarlet. The species was introduced in 1809. The great art of cultivating this plant is allowing it plenty of water.

4.—LOBELIA SPLENDENS, Willd. THE SPLENDID LOBELIA.

SPECIFIC CHARACTER.—Leaves narrowly lanceolate, denticulate, flat at the margin; stem very smooth; raceme terminal.

ENGRAVING.—Bot. Reg. t. 60.

DESCRIPTION, &c.—This species is nearly allied to the last, but it is perfectly smooth in all its parts instead of being covered with a short close pubescence. It is also a taller growing plant, and much more hardy, as it will continue in blossom till November without its flowers being apparently injured by frost. It should be grown in rich loam, and allowed plenty of water while the flower-buds are forming. Both this species and *fulgens* look exceedingly well on the margin of a piece of water, as in a situation of this kind, where their roots can get access to plenty of moisture, the plants become exceedingly strong and vigorous, and produce an abundance of splendidly dark-coloured flowers. The species is a native of Mexico, and it was brought to Europe with *L. fulgens*, though it was not introduced into England till 1814.

5.—LOBELIA SPECIOSA, D. Don. THE SHOWY LOBELIA.

SYNONYMS.—*L. spiliatrica*, var. *hybrida*, Hook.; Low's purple *Lobelia*, Lindl.

ENGRAVINGS.—Bot. Mag. t. 3604; Bot. Reg. t. 1445; Sweet's Brit. Flow. Gard. 2d ser. t. 174.; and our fig. 2, in Pl. 65.

SPECIFIC CHARACTER.—The whole plant covered with velvet pubescence; leaves sessile, lanceolate, acutely denticulated; raceme loosely spicate; peduncles tritactate; segments of the calyx recurved at the edges, and slightly waved.

DESCRIPTION, &c.—This very beautiful plant is evidently a hybrid, though it is not known with certainty by whom it was raised, or between what species. In the *Botanical Magazine* it is said to be the offspring of *L. spiliatrica*, a blue-flowering species, and *L. cardinalis*, the flowers of which are of a bright scarlet. In the *Botanical Register* the same origin is given to it, and it is said to have been raised in Scotland, from which country it was procured by Mr. Low, of the Clapton Nursery, and hence the name given to it in the *Botanical Register*, of Low's purple. In Sweet's *British Flower Garden* another origin is given to it, and it is said to

be the offspring of *Lobelia fulgens* and *L. cœrulea*, and to have been raised in a garden in Ireland. Whatever its origin may have been, it is a very handsome and desirable plant, and that if its parents were a blue and a scarlet *Lobelia*, that it has mixed their colours completely, as it is of a rich dark purple. Among the synonymes given to this plant in the *Botanical Magazine* is *L. Milleri*; but this plant, which is well known to be a hybrid between *L. syphilitica* and *L. cardinalis*, is a very different plant from *L. speciosa*, as it has completely the habit of *L. syphilitica*, though its flowers are purple, whereas the flowers of *L. speciosa* resemble those of *L. fulgens*, both in habit of growth and shape.

6.—LOBELIA CARDINALIS, Lin. THE SCARLET LOBELIA.

SYNONYMES.—*Rapuntium galeatum*, *Morr.*; *Trachelium Americarum*, *Park.*; the cardinal's flower.

ENGRAVING.—*Bot. Mag.* t. 320.

VARIETY.—*L. c. B. Milleri*, *Sweet's Brit. Flow. Gard.* 2d ser. t. 372.

SPECIFIC CHARACTER.—Stem erect; leaves broadly lanceolate, serrated; raceme terminal, partly secund.

DESCRIPTION, &c.—This very beautiful species of *Lobelia* is a native of Canada, as well as of the warmer parts of North America, and when it was discovered in that country it was sent to the beautiful Henrietta Maria, Queen of Charles I., who being a French princess, and passionately attached to her own country, no doubt liked it the better, from Canada being at that period a settlement of France. It is said that when the Queen saw it she laughed excessively, and said that its colour reminded her of the scarlet stockings of a cardinal, whence the learned botanist Parkinson called it the cardinal's flower in his *Paradise*, a work which he afterwards published and dedicated to her Majesty. This plant, having been introduced in 1629, is the oldest *Lobelia* in our gardens, and it is also the hardiest, for it will grow in almost any soil and situation that is not too dry. It does best, however, in a stiff moist soil, and when it is taken up and replanted every three or four years. It flowers from the latter end of July till October. It is generally increased by dividing the roots, though it will grow freely from cuttings; or it may be raised from seeds, of which it ripens abundance in favourable autumns.

7.—LOBELIA SYPHILATICA, Lin. THE BLUE AMERICAN LOBELIA.

ENGRAVINGS.—*Bot. Reg.* t. 537; and our *fig.* 4 in Pl. 66.

SPECIFIC CHARACTER.—Stem erect; leaves ovate, oblong, acutely

but unequally serrated; flowers axillary, solitary; segments of the calyx reflexed at the edge; peduncles hairy.

DESCRIPTION, &c.—This was the second species of *Lobelia* brought to England, having been introduced in 1665; and as it was easily recognised it belonged to the same genus as *L. cardinalis*, it received on its first introduction the somewhat anomalous name of the blue cardinal. It is, however, very different from *L. cardinalis*, both in the habit of its growth and the shape of its flowers; but it is found in nearly the same localities, always growing on the bank of a river or near a spring. It is said to be in great repute among the Indians for its medicinal virtues, and it acts as a violent emetic, but it is considered dangerous. It is a coarse weedy-growing plant, abounding in milky juice, and it has a disagreeable smell. The root, which is the part used medicinally, tastes like tobacco. It will grow freely in any strong moist soil.

8.—LOBELIA COLORATA, D. Don. THE COLOURED OR RED-LEAVED LOBELIA.

ENGRAVING.—*Sweet's Brit. Flow. Gard.* 2d. ser. t. 180.; and our *fig.* 3, in Pl. 65.

SPECIFIC CHARACTER.—The whole plant is smooth. Leaves lanceo-

late, acuminate, erosely dentate. Raceme spicate, leafy. Peduncles naked. Segments of the calyx linear-subulate, recurved at the margin.

DESCRIPTION, &c.—The stems of this species are upright and simple, and though not thicker than an ordinary goose-quill, they grow from four to five feet high. The leaves are very peculiar; they are of a deep



1. *Lobelia Tupa* 2. *Lobelia Fudgeana* 3. *Lobelia polyphylla* 4. *Lobelia spicata*

green, but stained with a dull red towards the margin; they are attenuated towards the base with curiously crisped stipules. The raceme is spicate and leafy, and very long; the flowers of a bright lilac, rather small, but very numerous. Altogether, this is a very singular-looking plant, from its stems being tall, straight, and unbranched; occasionally, indeed, rising to the height of six feet, and terminating in a long, close spike of blue flowers. It was imported from North America about 1830, but it is supposed by Professor Don to be a natural hybrid, on account of the imperfection of its anthers. It grows best in a light loamy soil, and it is propagated by dividing the roots, or by cuttings, as it rarely ripens seeds.

9.—LOBELIA FENESTRALIS, Cav. THE WINDOW-LIKE LOBELIA.

SYNONYME.—*Rapuntium fenestrale*, Presl.; the loop-holed Lobelia.

ENGRAVINGS.—Bot. Reg. for 1838, t. 47.

SPECIFIC CHARACTER.—Stems simple, furrowed. Leaves lanceolate,

acuminate, dentate, glabrous, half stem-clasping. Terminal spike many-flowered, leafy. Style and stamens projecting from a cleft in the tube of the corolla.

DESCRIPTION, &c.—This species is a native of Mexico, growing at the height of 6,600 feet above the level of the sea: it was introduced in 1837. It is a biennial, requiring to be raised on a hot-bed, and to have slight protection during winter. It is, however, not worthy of cultivation, as it is a weedy-looking plant, with small flowers of no beauty.

10.—LOBELIA PUBERULA, Mich. THE DOWNY LOBELIA.

ENGRAVINGS.—Bot. Mag. t. 3292; and our fig. 4, in Plate 65.

SPECIFIC CHARACTER.—Obsoletely pubescent. Stem erect, angular.

Leaves oblong, obtusely denticulate. Spike elongated. Segments of

the calyx erect, subulate-lanceolate, entire. Stamens enclosed in the flower.

DESCRIPTION, &c.—The flowers of this species bear a considerable resemblance to those of *L. syphilitica*, but their colour is more purple, and the spike is less dense and more elongated. The stem grows two or three feet high, and the spike is frequently a foot long. The species is a native of North America, whence it was introduced in 1819.

11.—LOBELIA CAMPANULOIDES, Willd. THE CAMPANULA-LIKE LOBELIA.

SYNONYMES.—*Lobelia erinoides*, Thunb.; the Japanese Lobelia.

ENGRAVINGS.—Bot. Reg. t. 733; and our fig. 6, in Plate 67.

SPECIFIC CHARACTER.—Leaves sub-petiolate, lanceolate, oblong, dentate; stem decumbent; petioles elongated.

DESCRIPTION, &c.—This plant is one of those species with numerous slender decumbent stems, which, if planted in a pot, fill it so completely as to hang over on every side. These species are also well adapted for beds in a geometrical flower-garden, as they cover the ground completely without pegging down. This species is quite hardy. It is a native of Japan, whence it was introduced in 1819. This species is quite different from *L. erinoides*, with which it is sometimes confounded, as that has a smaller flower, and is an annual.

12.—LOBELIA ERINUS, Thunb. THE ASCENDING LOBELIA.

ENGRAVINGS.—Bot. Mag. t. 901; and our fig. 5, in Plate 67.

SPECIFIC CHARACTER.—Stems thread-like, tortuose, erect; leaves

obovate, sharply dentate, glabrous, petiolate; flowers terminal, racemose; capsules two-celled.

DESCRIPTION, &c.—This plant, though it has an exceedingly slender stem, has always a tendency to grow upwards; and, when planted in a flower-pot, it never hangs over, like the preceding species, but grows with a long slender straggling stem, which has a very untidy appearance, and hence the species is comparatively little

grown, notwithstanding the beauty of its flowers, which greatly resemble those of the now well-known Californian annual, *Clintonia*. This species of *Lobelia* is a native of the Cape of Good Hope, and consequently requires protection during winter; though, like all the half-hardy *Lobelias*, it flowers freely in the open ground during summer. It was introduced in 1752.

13.—*LOBELIA CORONOPIFOLIA*, *Lin.* THE BUCK'S-HORN-LEAVED LOBELIA.

SYNONYME.—*Rapuntium Æthiopicum*, *Herm.*

ENGRAVINGS.—*Bot. Mag.* t. 644; and our *fig.* 3, in Plate 67.

SPECIFIC CHARACTER.—Leaves oblong, dentately pinnatifid; stem erect and hairy; peduncles elongated.

DESCRIPTION, &c.—This species is remarkable for a tuft of radical leaves at the base of its stem, which are so deeply dentate as to look like small stag's horns, and hence the specific name. The flowers are large, and very handsome; only two are produced on each stem, and sometimes there is only one. This species is a native of the Cape of Good Hope, whence it was introduced in 1787. It requires protection during winter.

14.—*LOBELIA CERULEA*, *Sims.* THE AZURE-BLUE LOBELIA.

ENGRAVINGS.—*Bot. Mag.* t. 2701; and our *fig.* 2, in Plate 67.

SPECIFIC CHARACTER.—Stems short, decumbent at the base, and densely leaved; leaves lanceolate, dentately pinnatifid, attenuated at

the base; flowers in a long terminal raceme; corolla deeply cut; limb longer than the tube.

DESCRIPTION, &c.—The leaves of this species closely resemble those of *L. coronopifolia*, but the flowers are very different; as, in the former species, the tube is longer than the limb, which is entire, or nearly so, while in this the limb is longer than the tube, and is deeply cut. The present species is a native of the Cape of Good Hope, whence it was introduced in 1823. It requires protection during winter.

15.—*LOBELIA HETEROPHYLLA*, *Lab.* THE VARIOUS-LEAVED LOBELIA.

ENGRAVINGS.—*Bot. Reg.* t. 2014; and our *fig.* 1, in Plate 67.

SPECIFIC CHARACTER.—Very smooth; stem angular, simple; racemes secund; leaves fleshy, lower ones dentately pinnatifid; upper

ones linear, quite entire; lower lip of the corolla deeply cut, middle segment obovate.

DESCRIPTION, &c.—This very beautiful plant is a native of Van Diemen's Land, whence it was sent to England in 1836. It has the peculiarity of growing and flowering equally well in the open air, in a greenhouse, and in a stove; and it also has the singular property of continuing to flower for a long time after it has been cut. A specimen in Mr. Veitch's Nursery, at Exeter, which was hung up in the stove without any soil, continued flowering for above a month; and a cut specimen that I had in a glass at Bayswater, continued opening fresh flowers for nearly three weeks. The flowers are very large, and of a deep rich blue.

16.—*LOBELIA LUTEA*, *Lin.* THE YELLOW LOBELIA.

SYNONYME.—*Parastranthus simplex*, *Dec.*

ENGRAVINGS.—*Bot. Mag.* t. 1319; and our *fig.* 7, in Pl. 67.

SPECIFIC CHARACTER.—Stem procumbent at the base, leafy. Leaves

lanceolate, serrated, glabrous. Flowers sessile and almost spicate. Corolla reversed. Segments much longer than the tube.

DESCRIPTION, &c.—This pretty little *Lobelia* is so different from the generality of the species, that it has been made into a separate genus with only the two following kinds. The corolla has scarcely any tube, and is reversed; that is, the three segments which form the lower lip in most of the species, in this form the upper lip,



Lobelia heterophylla—2. *Lobelia Corulca*—3. *Lobelia coronopifolia*—4. *Lobelia Kalmii*—5. *Lobelia Erius*.
6. *Lobelia Campanuloides*—7. *Lobelia Lutea*—8. *Lobelia unidentata*.

and stand erect ; the two lower segments forming an arch over the anthers, which are crowned with a fine fringe. The upper part of the style has also a hairy fringe ; but when the stigma protrudes beyond the anthers, it is quite smooth, and appears as if inserted obliquely by a joint into the hairy style. It is a native of the Cape of Good Hope, whence it was introduced in 1774. It requires only a slight protection during winter, and produces so many offsets from the root, as soon to fill any bed that it may be planted in.

17.—LOBELIA VARIIFOLIA, *Sims.* THE VARIOUS-LEAVED LOBELIA.

SYNONYME.—*Parastranthus variifolia*, *Dec.*

ENGRAVING.—*Bot. Mag.* t. 1692.

SPECIFIC CHARACTER.—Stem erect. Leaves linear ; lower ones

completely entire ; upper ones pinnatifidly dentate. Flowers terminal, often solitary, inverted.

DESCRIPTION, &c.—This species bears a great resemblance to the last, but it differs in its very singular leaves ; in the stigma being three-cleft instead of two-cleft ; and in the two lower segments of the corolla not being united over the stamens. The species is a native of the Cape of Good Hope, whence it was introduced about 1810.

18.—LOBELIA UNIDENTATA, *Lin.* THE SINGLE-TOOTHED LOBELIA.

SYNONYMS.—*L. bidentata*, *Donn.* ; *Parastranthus unidentata*, *Dec.*

ENGRAVINGS.—*Bot. Mag.* t. 1484 ; and our *fig. 8*, in Plate 67.

SPECIFIC CHARACTER.—Stem slightly decumbent at the base. Leaves linear, entire, or with one tooth. Flowers inverted.

DESCRIPTION, &c.—This is the last of the three species of *Lobelia* which have their flowers inverted ; that is, which have their upper lip in three segments, and their lower lip in two ; while all the common species of *Lobelia* have the upper lip in two segments, and the lower one in three. On this account, Professor De Candolle has placed these three species of *Lobelia* in a new genus, which he has called *Parastranthus*, and which means literally, with inverted flowers. The present species is extremely pretty. In its normal habit, the flowers are of a dark violet, and it looks exactly like one of the common violets of our gardens ; but occasionally, when raised from seed, this *Lobelia* varies in colour to a pale blue, or almost to white, and in either state it makes a remarkably pretty flower for filling one of the beds of a symmetrical flower-garden. It is a native of the Cape of Good Hope, whence it was introduced in 1794. It continues producing a succession of blossoms all the summer, and it is propagated by seeds, which it produces in great abundance, or by cuttings, which are generally placed a good many together in one pot, and kept in a greenhouse or cold pit during the winter.

OTHER SPECIES OF LOBELIA.

These are very numerous ; but nearly all the other perennial species are greenhouse plants, which will not bear the winter in the open ground ; indeed, all the pretty little *Lobelias*, which are natives of the Cape of Good Hope, will not endure either the wet or cold of an English winter without protection, unless they are planted in a very dry soil ; and, when this is the case, they should be supplied with water abundantly when they are near flowering.

GENUS II.

TUPA, *D. Don.* THE TUPA.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx turbinate, five-toothed. Tube of the corolla longitudinally cleft on the upper side; limb five-parted, secund. Stamens monadelphous. Anthers cohering, the latter two fringed at

the apex. Stigma two-lobed, bearded behind. Capsule half enclosed in the calyx, two-celled, many-seeded, opening at the apex. Seeds elliptic, concave, smooth.

DESCRIPTION, &c.—The species forming this genus were all formerly included in the genus *Lobelia*, but they are easily distinguished by their flowers having only one lip, and the tube of the corolla being cleft down to the base on the upper side. The difference will be easily perceived by comparing *Lobelia syphilitica*, in Pl. 66, with the other species figured in the same plate, which, though called on that plate by their old name of *Lobelia*, all belong to the modern genus, *Tupa*. All the species of this genus are natives of South America, and *Tupa* is their aboriginal name in that country.

1.—TUPA FEUILLEI, *Dec.* THE COMMON TUPA.

SYNONYMES.—*Lobelia Tupa*, *Lin.*; *Rapuntium spicatum*, *Feuil.*; the *Tupa* poison plant; the Mallin-leaved *Lobelia*.

ENGRAVINGS.—*Bot. Mag.* t. 2550; *Bot. Reg.* t. 1612; *Sweet's Brit. Flow. Gard.* 284; and our *fig. 1*, in Pl. 66.

SPECIFIC CHARACTER.—Stem erect, five-angled. Leaves oblong, acutely denticulate, under-surface covered with a tomentose pubescence, penninerved; reticulately-veined, sessile, decurrent. Terminal raceme elongated; bracts nearly equal to the pedicels. Flowers pubescent.

DESCRIPTION, &c.—This may be called a stately plant, from its tall, erect stem, and candelabra-like flowers. The stem is frequently above eight feet high, generally hollow, and five-angled. The terminal raceme of flowers is frequently two feet long. This plant was first discovered by Father Feuillei, who visited the west coast of South America between the years 1707 and 1712; and who, according to the quotation from his work, given in the *Botanical Register*, speaks of this plant in the following terms:—"All this plant is a most ready poison; its root yieldeth a deadly milk, as also doth its stem; the odour of its flowers produeth cruel sickness. When one handleth them, care must be had not to bruise them between the fingers; for if one thereafter rubbeth his eyes, some of the milk having touched them, a man will surely lose his sight." Though this account is exaggerated, like many of the descriptions of plants by the early writers on these subjects, there is no doubt that the milk of this kind of *Tupa* is more poisonous than that of any of the other species of the genus. The common *Tupa* is a native of Chili, whence it was introduced in 1824. It is tolerably hardy in British gardens, and will generally live through the winter without any protection, if it be kept dry. *Tupa* is the original name of this plant in Chili, and hence the other species are generally called by the same name throughout South America.

2.—TUPA SALICIFOLIA, *Dec.* THE WILLOW-LEAVED TUPA.

SYNONYMES.—*Lobelia Tupa*, *Ait.*; *Lobelia gigantea*, *Sims*; the willow-leaved *Lobelia*; the gigantic *Lobelia*.

ENGRAVING.—*Bot. Mag.* t. 1325.

SPECIFIC CHARACTER.—Stems suffruticose. Leaves lanceolate, sessile, serrulated. Flowers axillary, solitary, shorter than the leaves.

DESCRIPTION, &c.—This is a gigantic species, growing fourteen or sixteen feet high, and much branched. The flowers are first yellow, and then become orange, turning red as they fade. This species, which was introduced in 1794 from Chili, was long supposed to be the *Lobelia Tupa* of Linnæus, and the poison plant of Father Feuillei; but Linnæus expressly mentions that his *Lobelia Tupa* had a five-angled, hollow stem, whereas the stem of this species is cylindrical and solid. The flowers also are orange instead of red. The species, though a

native of Chili, appears to be quite hardy in British gardens; but it is scarcely worth cultivating in them, on account of the great space it takes up, and the small size of the flowers in proportion to the leaves.

3.—TUPA CAVANILLESIANA, *Dec.* CAVANILLES'S TUPA.

SYNONYME.—*Lobelia mucronata*, *Cav.*

ENGRAVING.—*Bot. Mag.* t. 3207.

SPECIFIC CHARACTER.—Leaves scattered, sessile, oblong-lanceolate,

serrulated, pubescent on both sides, terminating in a sharp point or mucro. Raceme short, slightly leafy, lax.

DESCRIPTION, &c.—This is the smallest of all the species included in the modern genus *Tupa*, as its stem seldom grows above two, or at most three feet high. It is very handsome, as its flowers are as large, in proportion to the leaves by which they are surrounded, as those of the preceding species were small. The flowers of this *Tupa* are produced in a short, loose, terminal raceme of twelve or fourteen flowers, which have a peculiarly gay and brilliant appearance, from their bright crimson colour, and the smallness of the leaves by which they are surrounded. This species was introduced in 1831, from Chili, and it requires the same treatment as the Common *Tupa*.

4.—TUPA POLYPHYLLA, *Hook et Arn.* THE MANY-LEAVED TUPA.

ENGRAVINGS.—*Bot. Mag.* t. 3550; *Sweet's Brit. Flow. Gard.*, 2d ser. t. 242; and our *fig.* 3, in Pl. 66.

SPECIFIC CHARACTER.—Stem suffrutescent at the base. Leaves broad, oblong-lanceolate, on very short petioles, coriaceous, sharply-serrated,

very smooth. Raceme leafy; pedicels pubescent, much shorter than the leaves. Calyx hemispherical, pubescent, much shorter than the leaves, dentate, with subulate entire teeth. Corolla pubescent, longer than the pedicel.

DESCRIPTION, &c.—This plant generally grows four or five feet high; but it sometimes attains the height of six feet, and at others does not exceed three feet. The stems are erect, cylindrical, and solid; without branches, but furnished with numerous leaves, and abounding in a nauseous, extremely acrid milk. The leaves are quite smooth and shining on both sides, but of a paler colour, and strongly veined beneath. The racemes are terminal, very leafy, and about a foot long; and the flowers are of a dark purple. This species is one of the hardiest of the *Tupa* division, as it is found on the hills near Valparaiso, while the other species are generally natives of the valleys. It was introduced in 1832. It grows best in a light, rich soil.

5.—TUPA BRIDGESII, *G. Don.* MR. BRIDGE'S TUPA.

SYNONYME.—*Lobelia Bridgesii*, *Hook et Arn.*

ENGRAVINGS.—*Bot. Mag.* t. 3671; and our *fig.* 2, in Pl. 66.

SPECIFIC CHARACTER.—Stem simple, suffrutescent at the base, glabrous; leaves lanceolate, sub-membranaceous, tapering to a long narrow point, finely serrated, decurrent at the base; raceme elongated,

bracteate, the bracts longer than the pedicels; segments of the calyx broadly subulate, ciliate-serrated; corolla very smooth; tube cleft at the back partially into five segments, so that the corolla is almost five-petaled; segments linear-acuminate; stamens exserted; anthers furnished with two bearded appendages.

DESCRIPTION, &c.—This very handsome species grows three or four feet high. The stem is suffrutescent at the base, and very smooth, though it is angled and winged by the bases of the leaves which grow to it. The leaves are five or six inches long, but they are narrow, tapering to a long point, and very finely and sharply serrated quite down to the base. The flowers are rose-coloured, and cleft into five segments, which adhere at the base, and again at the point. The stamens project beyond the flower; the filaments are combined into a tube; and the anthers are lead-coloured—two of them are bearded at the apex. This very handsome species is a native of the south of Chili, where it was found by Mr. Bridges, and introduced by him in 1837. It requires the same treatment as the preceding species, but it is more tender.

6.—TUPA BLANDA, *D. Don.* THE PINK-FLOWERED TUPA.

ENGRAVING.—Sweet's Brit. Flow. Gard. 2d Series, t. 308.

SPECIFIC CHARACTER.—Very smooth; leaves lanceolate, cuspidate,

doubly serrated, decurrent at the base; bracteous, bracts somewhat convolute; teeth of the calyx subulate; anthers glabrous.

DESCRIPTION, &c.—This very handsome species bears considerable resemblance to *Tupa Bridgesii*, but the flowers are of a darker rose colour, and the segments of the lower limb of the corolla are divided at the apex when the flower is fully expanded. This species is also distinguished by the bracts, the edges of which are rolled inwards. It requires the same treatment as *Tupa polyphylla*, and is as hardy as that species. It is a native of Chili, whence it was introduced in 1830.

7.—TUPA DECURRENS, *Dec.* THE WINGED-STALKED TUPA.SYNONYME.—*Lobelia decurrens*, *Cav.*

ENGRAVING.—Sweet's Brit. Flow. Gard., 2d Series, t. 86.

SPECIFIC CHARACTER.—Leaves ovate-lanceolate, decurrent, crowded,

doubly serrated, glabrous; flowers axillary, on very short peduncles; calyx hairy; segments lanceolate, deeply cut; segments of the corolla hairy towards the apex.

DESCRIPTION, &c.—This is a very singular but weedy-looking plant, from the manner in which the leaves grow to the stem. The flowers are purple, and the stem grows about five feet high. It is a native of Chili, whence it was introduced in 1829. It is quite hardy in the open garden. The juice of this plant is remarkably acrid.

TUPA PURPUREA, *Lindl.*

This is a half-shrubby plant, requiring protection during winter. It is a native of Valparaiso, whence it was introduced in February, 1825; and though it is called the purple Tupa, it has bright crimson flowers.

TUPA ARGUTA, *Lindl.*

Has dingy yellow flowers, and is still more shrubby than the preceding species. It is a native of Chili, whence it was introduced in 1824.

TUPA PERSICIFOLIA, *Dec.*

Has rose-coloured flowers. It is a native of South America, and was introduced in 1825.

There are three other species, natives of the West Indies, but they all require a stove in British gardens.

CHAPTER XXIX.

ERICACEÆ.

CHARACTER OF THE ORDER.—Calyx four or five-cleft, inferior. Corolla hypogynous, four or five-cleft, imbricated. Stamens definite, hypogynous. Anthers two-celled, dehiscing by a pore. Ovary

many-celled, many-seeded. Style one. Fruit capsular. Seeds indefinite, minute. Embryo in the axis of albumen. (*Lindl.*)

DESCRIPTION, &c.—The Heath tribe is so generally known as consisting principally of showy-flowering shrubs, that it seems quite out of place in a work devoted exclusively to perennials. This order does, however, contain one genus, consisting entirely of herbaceous plants, called *Pyrola*, or the winter green; and the curious parasites included in the genus *Monotropa*, or the yellow bird's nest, may also be called perennials.



1. *Pyrola umbellata*. — 2. *Vinca herbacea*. — 3. *Epilobus hirsutus*. — 4. *Anemone latifolia*. — 5. *Apocynum androsaemifolium*.

GENUS I.

PYROLA, *Lin.* THE WINTER-GREEN.*Lin. Syst.* DECANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted. Petals five. Capsule five-celled, opening at the angle.

DESCRIPTION, &c.—The common winter-green is a British plant. There are indeed several species that are natives of Britain; but the only two kinds that are sufficiently ornamental to be worth cultivating in a flower-garden, are two of the American species. The word *Pyrola*, is said to be a diminutive of *Pyrus* a Pear-tree, from a slight resemblance in the leaves of the winter-green to those of some kinds of pears.

1.—PYROLA UMBELLATA, *Lin.* THE UMBELLATED WINTER-GREEN.

SYNONYMES.—*Chimaphila corymbosa*, *Pursh.*; *C. umbellata*, *Dec.*
 ENGRAVINGS.—*Bot. Mag.* t. 778; and our *fig.* 1, in Plate 68.

SPECIFIC CHARACTER.—Flowers in umbels. Stigma sessile, entire.

DESCRIPTION, &c.—This very pretty little plant, though common in many parts of Europe, Asia, and America, particularly in the latter country, has never yet been found wild in Great Britain. It begins to flower in June, and continues in blossom till the end of autumn. It should be grown in a situation sheltered from the sun, and it requires to be frequently watered. It was introduced from North America in 1762.

2.—PYROLA MACULATA, *Lin.* THE SPOTTED-LEAVED WINTER-GREEN.

SYNONYMES.—*P. marylandica*, *Pet.*; *P. mariana*, *Pulk.*; *Chimaphila maculata*, *Dec.*

ENGRAVING.—*Bot. Mag.* t. 897.

SPECIFIC CHARACTER.—Leaves lanceolate, rigidly scrtated, discoloured on the face. Scape two or three-flowered. Stigma nearly sessile, hemispherical.

DESCRIPTION, &c.—This species is distinguished from the last by the leaves, which are broader, more rigid, and sharply pointed; they are marked on the face with a pale line covering the mid-rib, and branching over the principal veins. The stem is twisted, and the leaves, though opposite, are thus generally turned to one side and crowded towards the upper part. The petals are reflexed, and the base of the filaments is deeply fringed. The species forms a dwarf plant from 6 inches to a foot high; and it has a very striking and lively appearance from its white flowers, bright-red stems, and singularly marked leaves. It is a native of North America, and was introduced in 1752.

CHAPTER XXX.

APOCYNÆÆ.

CHARACTER OF THE ORDER.—Calyx five-cleft, permanent. Corolla monopetalous, hypogynous, regular, five-lobed, imbricate in æstivation, deciduous. Stamens five, epipetalous, alternating with the segments of the limb of the corolla; anthers two-celled, dehiscing lengthwise; pollen granular. There is sometimes only one ovary; but occasionally

there are two, and therefore the styles are one or two, but there is always only one stigma: the ovaries, for the most part, are many-seeded. Fruit follicular, drupaceous or baccate, or many-seeded, solitary or twin. Seeds usually albuminous. Embryo foliaceous, with an inconspicuous plumule.

DESCRIPTION, &c.—The plants belonging to this order are readily known by the twisted direction of the corolla of their flowers, which has been compared to the rays of St. Catharine's wheel. The juices of these plants, like those of *Lobeliaceæ*, are milky, and extremely poisonous. The flowers are generally handsome. Most of the species are trees and shrubs, and by far the greater part are natives of hot climates; but three of the genera contain a few hardy perennials.

GENUS I.

APOCYNUM, *Lin.* THE DOG'S-BANE.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Corolla campanulate, with five small acute teeth in the tube, opposite the segments of the limb. Stamens enclosed. Styles wanting. Hypogynous scales five. Follicles slender.

DESCRIPTION, &c.—This genus was well known to the ancients and it was called Apocynum by Dioscorides, which signifies literally “dog’s bane,” because it was supposed to be peculiarly injurious to dogs. There are numerous species, several of which are hardy perennials. They have nearly all the peculiarity of throwing up a great many suckers from the root.

1.—APOCYNUM ANDROSEMIFOLIUM, *Lin.* THE TUTSAN-LEAVED DOG’S-BANE.

SYNONY. “s.—Apocynum canadense, *Bocc.*; Fly-catching Apocynum.

ENGRAVINGS.—Bot. Mag. t. 280; and our *fig.* 5, in Pl. 68.

SPECIFIC CHARACTER.—Stem erect. Leaves ovate and glabrous. Cymes terminal and lateral. Tube of the corolla much longer than the calyx.

DESCRIPTION, &c.—This is a hardy perennial plant, growing about two feet high, and flowering from July to September. It will not thrive in a wet soil; but in light dry soils, and in a warm situation, it increases so fast as to become quite a weed, throwing up an amazing number of suckers, by which it is propagated, as it rarely ripens seeds in this country. The flowers of this plant have a sweet, honey-like fragrance, which perfumes the air to a considerable distance, and which probably operates in attracting insects; as, when the flowers of this plant are fully blown, flies are generally found attached to them, some dead, and others alive and struggling to disentangle themselves. Sometimes four, or even five, may be found in one flower. The manner in which these flies are caught is very curious. The five stamens have large anthers, which form a kind of cone in the centre of the flower. Each of these anthers is arrow-shaped; and though towards the top of the cone their sides touch, lower down they separate a little, so as to leave a narrow opening or slit between every two. In the centre of the anthers stands the stigma, which is in the shape of a little urn, the middle of which is encircled by a glandular ring, which secretes a glutinous honey-like substance. This sweet substance attracts the flies, which insinuate their trunks between the openings at the lower part of the anthers; and then, the trunk being raised upwards to obtain the honey, is drawn into the narrow part of the slit, and becomes so closely wedged in, that the insect can very seldom extricate itself. The species is a native of different parts of North America and Canada, whence it was introduced in 1688.

2.—APOCYNUM CANNABINUM, *Lin.* THE HEMP DOG’S-BANE.

SPECIFIC CHARACTER.—Leaves lanceolate, acute at both ends, glabrous; cymes panicled; calyx equal in length to the tube of the corolla. (*G. Don.*)

DESCRIPTION, &c.—This species grows two or three feet high, and has small yellowish-green flowers. It is a native of Canada and various parts of North America, where it is frequently called Indian Hemp, because the Indians use the fibres of the stems, as we do those of the hemp, in making ropes, fishing-nets, bags, and various other articles. It was introduced in 1699.

OTHER SPECIES OF APOCYNUM.

A. HYPERICIFOLIUM, *R. Br.*

This species has small white or reddish flowers, and smooth leaves, which are somewhat cordate at the base. It is a native of North America, where it is found from New York to Virginia, generally on the gravelly banks of rivers. It was introduced in 1758.

A. SIBIRICUM, *R. Br.*

A native of Astrachan, where it grows in salt marshes. The flower-stalks and calyces of the flowers are clothed with a powdery down.

A. VENETUM, *Lin.*

This species is a native of the south of Europe. It has red flowers, but there is a variety of it, the flowers of which are white. It was introduced in 1690.

GENUS II.

VINCA, *Lin.* THE PERIWINKLE.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft; segments linear or subulate, acute. Corolla salver-shaped; tube longer than the calyx; throat bearded; segments of the limb flat, oblique, truncate at the apex. Stamens five, inserted in the throat, enclosed; filaments short; anthers ending each in a hairy membrane at apex, and conniving over the stigma; stigma bearded, seated on a flat, orbicular disc, which is grooved round the circumference. Glands two, alternating with the ovary; glabrous as well as it. Follicles two, erect, terete, narrow, dehiscing lengthwise, few-seeded. Albumen fleshy. Seeds cylindrical, naked. (*G. Don.*)

DESCRIPTION, &c.—All the kinds of Periwinkle are creeping plants, and only one of them is a perennial. The flowers are blue, purple, or white, and they are all natives of Europe. The word *Vinca* is derived from *vinco*, to conquer, because the species subdue other plants by their creeping roots.

1.—VINCA HERBACEA, *Waldst. et Kit.* THE HERBACEOUS PERIWINKLE.

ENGRAVINGS.—Bot. Mag. t. 2002; and our fig. 2, in Plate 68.

SPECIFIC CHARACTER.—Stems procumbent, rooting. Leaves oblong-lanceolate, minutely ciliated when young. Calycine segments subulate glabrous; segments of the corolla lanceolate, or somewhat falcate.

DESCRIPTION, &c.—This very pretty plant is a native of Hungary, where it is found in open situations on chalky or sandy hills. In gardens it is an exceedingly useful plant, as it is not quite so strong-growing, or so destructive to other plants, as the shrubby kinds of Periwinkle, and yet is equally useful in covering the ground under trees. There are two or three varieties, generally only differing in the colour of the flowers, some being quite of a purplish-red, and others almost blue.

GENUS III.

AMSONIA, *Clayton.* THE AMSONIA.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Plants twisted. Corolla funnel-shaped; the throats of the tube being closed with pubescence. Follicles two; erect. Seeds naked.

DESCRIPTION, &c.—All the species belonging to this genus are perennials, and natives of North America. They have erect stems, slightly twisted in their growth, which die down to the ground every winter, and which

send up suckers from underground buds. They are natives of marshy places, and will not succeed in very dry soil. The species were included by Linnæus in *Tabernæmontana*; but they have been separated, because their seeds are not immersed in pulp, as in that genus. The name was given in honour of an American traveller, named Amson.

1.—AMSONIA LATIFOLIA, *Clayton*. THE BROAD-LEAVED AMSONIA.

SYNONYMS.—*Amsonia Tabernæmontana*, *Walt.*; *Tabernæmontana Amsonia*, *Lin.*; *Apocynum virginianum*, *Pluk.*

ENGRAVINGS.—*Bot. Reg.* t. 151; and our *fig. 4*, in Plate 68.

SPECIFIC CHARACTER.—Stem very smooth; leaves oval-lanceolate; upper ones drawn out to a long point, and slightly pubescent on the veins beneath.

DESCRIPTION, &c.—This is a very pretty little plant, with loose panicles of blue flowers, having a fragrance like those of the violet. The stem dies down to the ground every year. It is a native of North America, where it was found by Pursh, growing in the wet shady woods of Carolina. It was introduced in 1759. It is tolerably hardy in British gardens, in which it should be grown in a moderately rich soil, and never suffered to become too dry.

2.—AMSONIA SALICIFOLIA, *Pursh*. THE WILLOW-LEAVED AMSONIA.

ENGRAVING.—*Bot. Mag.* t. 1873.

SPECIFIC CHARACTER.—Stem smooth; leaves linear-lanceolate, acutely pointed, and very smooth.

DESCRIPTION, &c.—This species is rather more tender than the preceding one. It is not so pretty, from the pale colour of the flowers, and the long narrow leaves. It requires a slight protection during severe frosts, and, like the preceding species, it should be grown in a tolerably good soil, and kept moist. Both species seldom produce seeds here, and are propagated by off-sets. It was introduced in 1812.

OTHER SPECIES OF AMSONIA.

A. ANGUSTIFOLIA, *Pursh*.

This one differs from the two preceding species, in having hairy stems. It was introduced in 1774.

CHAPTER XXXI.

ASCLEPIADACEÆ.

CHARACTER OF THE ORDER.—Calyx five-cleft, persistent. Corolla monopetalous, hypogynous, five-lobed, regular, deciduous. Stamens five, inserted in the bottom of the corolla, alternating with the segments of the limb. Filaments usually connected. Anthers two-celled, but sometimes almost four-celled, from a partial dissepiment in each of the true cells. Pollen coalescing in masses, which become

fixed to the five processes of the stigma. Ovaries two. Styles two, with a common stigma, which is dilated and pentagonal. Follicles two, one of which is often abortive. Seeds numerous, imbricate, pendulous, usually furnished with a tuft of hair at the upper extremity. Albumen in two parts. Embryo straight, with leafy cotyledons, a superior radicle, and a very small plumule.

DESCRIPTION, &c.—The plants belonging to this order are easily distinguished from most other plants, by their pollen being produced in waxy masses, instead of being in the shape of fine dust, as is generally the case. The only other order of plants which resembles the Asclepiadaceæ in its pollen is the Orchidaceæ. In the silky hairs attached to the seeds, these plants resemble some of the kinds of Apocynææ. Most of the plants belonging to this order require a stove in England.



1. *Asclepias tuberosa*. — 2. *Asclepias incarnata*. — 3. *Asclepias decumbens*.

GENUS I.

ASCLEPIAS, *Lin.* THE SWALLOW-WORT.*Lin. Syst.* PENTANDRIA DIGYNIA.

GENERIC CHARACTER.—Corolla five-parted, reflexed. Leaflets of having a little horn-shaped segment running from the bottom of each, corolla cucullate, seated on the top of the tube of the filaments, and lying in the hollow. Follicles slender, smooth.

DESCRIPTION, &c.—In the plants included in this genus, the pollen is in ten separate masses, two of which are affixed to each of the angles of the stigma. The cup formed by the united filaments has five leaflets opposite the anthers, with a second series of small leaflets below the first. The flower is thus very curiously formed, and the parts are so complicated as to puzzle a young botanist, who can hardly tell which is the stigma and which are the anthers. The name *Asclepias* refers to the heathen God of Physic, and it was applied to plants belonging to this genus, from their supposed medicinal virtues. The English name of Swallow-wort is supposed to apply to the appearance of the seed-vessel when just bursting open, so as to show its feathery seeds, when it has been fancied to bear a resemblance to a swallow on the wing.

1.—ASCLEPIAS TUBEROSA, *Lin.* THE TUBEROUS-ROOTED SWALLOW-WORT.

SYNONYMES.—*A. hirsute*, *Gron.*; *Apocynum carolinianum*, *Pet.*; the orange-flowered *Asclepias*.

ENGRAVINGS.—*Bot. Reg.* t. 76; and our *fig.* 1, in Plate 69.

SPECIFIC CHARACTER.—Stem erect, divided at the summit into spreading branches, very hairy; leaves distant, oblong-lanceolate; umbels sub-corymbose, terminal.

DESCRIPTION, &c.—This plant is a native of many parts of North America, in some of which it is called Butterfly-weed, from its being generally covered with butterflies. In other places it is called the Pleurisy plant, from its medicinal virtues, which are said to be very considerable. The plant has also several other names in America, the oddest of which is *Ache-in-the-side* plant, from its supposed efficacy in cases of pleurisy.

2.—ASCLEPIAS INCARNATA, *Lin.* THE ROSE-COLOURED SWALLOW-WORT, OR WATER SILK-WEED.

SYNONYMES.—*A. pulchra*, *Willd.*; *Apocynum minus*, *Barrel.*

ENGRAVINGS.—*Bot. Reg.* t. 250; and our *fig.* 2, in Plate 69.

SPECIFIC CHARACTER.—Stem erect, branching at the upper part,

covered with soft wool. Leaves lanceolate and covered with a soft woolly tomentum. Umbels numerous, terminating every branch; appendages of the stamens exerted.

DESCRIPTION, &c.—This is a very handsome species, which varies a good deal in the degree of pubescence found upon the stem and leaves, and a little in the colours of the flowers; which, however, are always of a purplish-pink, or a deep rose-colour. The plant is a native of North America, whence it was introduced in 1710; but though it is quite hardy, it is not so common in British gardens as it deserves to be. In its native country, it grows in swamps and on the banks of rivers; and probably the principal reason that it does not succeed so well in England is, that it is generally kept too dry. When properly treated, it produces abundance of flowers in July and August. The flowers have the fragrance of the *Heliotrope*. It is generally propagated by the young plants it throws up, as it seldom ripens seed in this country.

3.—ASCLEPIAS PULCHRA, *Ehr.* THE PRETTY SWALLOW-WORT.

ENGRAVING.—*Sweet's Brit. Flow. Gard.*, 2d ser. t. 18.

SPECIFIC CHARACTER.—Leaves with very short petioles, subcordate,

oblong, acute, and very hairy. Stem erect, hairy, divided in the upper part. Umbels terminal; flowers erect.

DESCRIPTION, &c.—This plant is supposed by some botanists to be only a variety of *A. incarnata*; but they appear to be tolerably distinct. The present species has dark purple flowers; which are produced in much

smaller umbels than those of *A. incarnata*. The present species also is a much larger plant, attaining the height of 3 or 4 feet or more; and the stem and leaves are covered with long hairs, and the lower leaves are cordate. This species also ripens its seeds freely in England, which the preceding one does not. *A. pulchra* is a native of North America, and it appears to have been in our gardens as long, or nearly so, as *A. incarnata*, though the exact year of its introduction is unknown.

4.—*ASCLEPIAS VARIEGATA*, *Lin.* THE VARIEGATED SWALLOW-WORT.

SYNONYMS.—*A. hybrida*, *Michx.*; *A. virginiana*, *Bauh.*; *Apocynum Americanum*, *Pulk.*

ENGRAVING.—*Bot. Mag.* t. 1182.

SPECIFIC CHARACTER.—Leaves ovate, rugged, naked. Stem simple. Umbels subsessile. Pedicels of the flowers tomentose.

DESCRIPTION, &c.—This species was the first introduced of the genus, having been brought to England in the year 1597. This plant possesses the quality, common, more or less, to all the species of the genus, and to some of the kinds of *Apocynum*, of catching flies; and it was from the quantity of honey-like juice secreted by the leaflets appended to the stamens, that Linnaeus called those parts nectaries. It is a native of Carolina, and flowers in July. The stem dies down to the root in winter, and hence it is sometimes supposed to be lost, and the root is thrown out in digging the ground, though it would have sent up fresh shoots in spring, if it had been suffered to remain undisturbed. As this species rarely ripens seeds in England, it is generally propagated by dividing the root.

5.—*ASCLEPIAS DECUMBENS*, *Pers.* THE DECUMBENT SWALLOW-WORT.

ENGRAVINGS.—Sweet's Brit. Flow. Gard. 2d ser. t. 24; and our *fig. 3*, in Plate 69.

SPECIFIC CHARACTER.—Stem decumbent, but somewhat ascending towards the points, and divided into short, but spreading branches;

very hairy. Leaves oblong, obtuse, mucronate; smooth above and hairy below; reticulately veined; upper ones opposite. Umbels many-flowered, lateral, and terminal.

DESCRIPTION, &c.—The roots of this plant are tuberous, and hence it has been supposed by some botanists to be a variety of *A. tuberosa*. They are, however, very distinct both in the stems and leaves. The stems grow several from the same root, and though at first trailing, they turn up at the points of the shoots, so as to form a very handsome tuft of flowers. The leaves are short, feather-nerved, and terminate in a short hard point or mucro. The flowers are small, but they are produced in great abundance, and from their brilliant colour, they are very showy. This species is readily distinguished, even when not in flower, from all the others, by its habit of growth and its oblong blunt leaves, which have the peculiarity of being glossy on the upper surface, and densely hairy below. It is a native of North America, and was introduced in 1731. It should be grown in peat.

6.—*ASCLEPIAS NIVEA*, *Lin.* THE SNOW-WHITE SWALLOW-WORT.

ENGRAVING.—*Bot. Mag.* t. 1181.

SPECIFIC CHARACTER.—Leaves opposite, ovate-lanceolate, tomentose below. Stem simple, swollen at the joints. Umbel extremely lax,

few-flowered. Pedicels of the florets very slender, and as long as the peduncle of the umbel.

DESCRIPTION, &c.—This species is remarkable for its very lax umbel; the flowers comprising which droop from the weakness of their foot-stalks. Though the flowers are said to be white, it is only the appendages of the stamens that are truly so, the petals being tinged with a greenish brown. It is a native of Virginia and the Carolinas, whence it was introduced in 1730. It is said to require a slight protection during severe frosts, and it is propagated by dividing the roots. This species is sometimes called the Almond-leaved Swallow-wort.

7.—*ASCLEPIAS AMŒNA*, Michx. THE HANDSOME SWALLOW-WORT.

ENGRAVING.—Sweet's Brit. Flow. Gard., 2d. ser., t. 82.

SPECIFIC CHARACTER.—Stem simple, swollen at the joints. Leaves on short petioles, oblong-oval, ending in an acute point; pubescent beneath. Umbel close, many-flowered, terminal; appendages three times as long as the stamens; erect.

DESCRIPTION, &c.—This is one of the strongest species of the genus, and when grown in peat and kept moist it will attain the height of 5 or 6 feet, spreading widely, with strong thick stems and large leaves. It is a native of North America, from New England to Virginia, and it was introduced in 1732. It appears quite hardy in British gardens.

OTHER SPECIES OF ASCLEPIAS.

These are very numerous, but all the hardy ornamental kinds have been described above.

GENUS II.

GONOLOBUS, R. Br. THE GONOLOBUS.

Lin. Syst. PENTANDRIA DIGYNIA.

GENERIC CHARACTER.—Masses of pollen ten; smooth; transverse. Corolla subrotate. Seeds hairy.

DESCRIPTION, &c.—All the species belonging to this genus are climbing-plants, either herbaceous or shrubby, with opposite, cordate leaves, and umbels of flowers which are either axillary or terminal. They are all natives of America; but the greater part of them require a stove in this country. The name *Gonolobus* is from two Greek words signifying an angled pod.

1.—*GONOLOBUS HIRSUTUS*, Michx. THE HAIRY GONOLOBUS.SYNONYME.—*Vincetoxicum acanthocarpus*, Walt.

ENGRAVINGS.—Sweet's Brit. Flow. Gard., t. 1; and our fig. 3, in Plate 68.

SPECIFIC CHARACTER.—Stem and petiole very hairy. Leaves acuminate and pubescent. Segments of the corolla oblong, oval, obtuse. Follicles oblong, mucronate.

DESCRIPTION, &c.—The stems of this plant are climbing, and thickly clothed with a dense, rusty pubescence. The leaves are opposite, hairy on both sides, and very strongly veined. The lower leaves are very large, being frequently 5 inches long, and nearly as much broad; they are cordate, with the lobes overlapping at the base. The seed-vessels are oblong, hooked at the points, and covered with warts. The species is a native of North America from Pennsylvania to Carolina, where it grows in the hedges, spreading over them in the same way as the common traveller's-joy does in England. It was introduced in 1806, and is propagated by seeds, which it ripens freely.

2.—*GONOLOBUS DISCOLOR*, Dec. THE TWO-COLOURED GONOLOBUS.SYNONYMS.—*Cynanchum discolor*, Banks; Virginian *Cynanchum*.

ENGRAVING.—Bot. Mag. t. 1273.

SPECIFIC CHARACTER.—Stem hairy. Umbels axillary. Segments of the corolla linear-lanceolate.

DESCRIPTION, &c.—The flowers of this species are called two-coloured, because the divisions of the calyx alternate with the petals in such a manner as to seem to form a part of the corolla. It is a native of Virginia, and was introduced in 1809.

CHAPTER XXXII.

GENTIANACEÆ.

CHARACTER OF THE ORDER.—Calyx four—five-cleft, permanent. Corolla monopetalous, hypogynous, regular, marcescent or deciduous, with an equally-parted limb; lobes equal in number to the calycine segments, but usually five, sometimes from four—eight, imbricate in æstivation. Stamens epipetalous, equal in number to the segments of the corolla, and alternating with them, but some of them are abortive. Ovary solitary, one—two-celled, many-seeded. Styles one or two :

when two, they are partly combined or altogether so; stigmas one—two. Capsule (sometimes a berry) many-seeded, one—two-celled, usually two-valved; having the margins of the valves bent in, and bearing the seeds in those in which the capsule is one-celled; but the seeds are inserted in central placentas in those with two-celled capsules. Seeds small. Embryo straight, enclosed in the axis of soft fleshy albumen. Radicle tending towards the umbilicus. (*G. Don.*)

DESCRIPTION, &c.—Most of the plants belonging to this order are hardy perennials. The leaves are opposite, entire, and without stipules. The flowers are generally very pretty, and produced in umbels. Their colour is generally blue, which in some of the species becomes of an extraordinary intensity. They are all natives of temperate climates, and are generally found in the coolest and most mountainous parts of Europe, Asia, and America. Their medicinal properties are tonic, and they are generally intensely bitter. The meaning of the word *Gentianella*, is a Little *Gentian*; but it is very badly applied, as the plants belonging to this genus are generally larger than those belonging to *Gentiana*.

GENUS I.

GENTIANELLA, *Borkh.* THE GENTIANELLA.

Lin. Syst. TETRANDRIA DIGYNIA.

GENERIC CHARACTER.—Calyx four-cleft. Corolla four-cleft, salver-shaped; furnished with four nectariferous pores at the base. Segments fringed. Seeds small, scrobiform.

DESCRIPTION, &c.—All the species are perennial plants; they are all quite hardy, and very ornamental

1.—GENTIANELLA BARBATA, *Frœl.* THE BEARDED GENTIANELLA.

SYNONYMS.—*G. ciliata*, *Borkh.*; *Gentiana ciliata*, *Lin.*; *Hippion ciliatum*, *Schmid.*
ENGRAVINGS.—*Bot. Mag.* t. 639; and our *fig.* 2 in Plate 70.

SPECIFIC CHARACTER.—Stem flexible, angular. Leaves lanceolate, or linear. Corolla four-cleft. Segments serrated, and bearded towards the mouth of the tube.

DESCRIPTION, &c.—This species is a native of Siberia, and is quite hardy. It is generally said to be a biennial, but it will last an indefinite number of years, as, though the plant dies down to the ground every winter, it sends up a number of young plants in the spring, often at a considerable distance from the parent. It was introduced in 1759. It is called *Gentiana ciliata* in our Plate, as it is most generally known by that name.

2.—GENTIANELLA FIMBRIATA, *Borkh.* THE FRINGE-FLOWERED GENTIANELLA.

SYNONYMS.—*Gentiana fimbriata*, *Willd.*; *G. ciliata*, *Bieb.*
ENGRAVINGS.—*Bot. Mag.* t. 2031; and our *fig.* 3, in Plate 71.
SPECIFIC CHARACTER.—Stem round, branches elongated, one-flowered;

naked under the flower. Leaves lanceolate, acute. Corolla four-cleft, deeply fringed round each segment. Calyx tetragonal, erect. Alternate segments margined.

DESCRIPTION, &c.—There appears a good deal of confusion in this genus, but the present species is quite distinct from *G. crinita*, with which it is frequently confounded. It is said to be a native of Mount Caucasus, and to have been introduced in 1818. It should be grown in peat, and it may be increased by seeds, which it ripens freely; but which should be sown as soon as they are ripe, as, if they are kept till spring, they seldom vegetate.



1. *Gentiana crenata* 2. *Gentiana ciliata* 3. *Gentiana pueasica* 4. *Gentiana verna* 5. *Gentiana acaulis*

3.—GENTIANELLA CRINITA, *G. Don.* THE JAGGED-FLOWERED GENTIANELLA.SYNONYME.—*Gentiana crinita*, *Frail.*ENGRAVINGS.—Sweet's Brit. Flow. Gard. t. 139; and our fig. 1, in Plate 70, under the name of *Gentiana crinita*.

SPECIFIC CHARACTER.—Stem erect, quadrangular; branches onc-

flowered. Leaves stem-clasping, acute. Calyx obsoletely tetragonal; segments acuminate, with a membranaceous margin. Corolla four-cleft, segments obovate, finely cut at the margins.

DESCRIPTION, &c.—This species is a biennial, and quite distinct from the previous species, with which it is often confounded, which is a true perennial. The flowers of *G. crinita* are very curiously and delicately cut at the margins, so as to give them a hairy appearance. The species is a native of North America, whence it was introduced in 1824. It should be grown in peat, and the seeds should be sown as soon as they are ripe.

OTHER SPECIES OF GENTIANELLA.

There are some other species of *Gentianella*, but they are rarely seen in British gardens, with the exception of *G. ciliata*, which is often confounded with *G. barbata*, to which it bears considerable resemblance.

GENUS II.

GENTIANA, *Lin.* THE GENTIAN.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Corolla campanulately funnel-shaped, four-five cleft. Stigma two-lobed. Seeds oblong, or roundish.

DESCRIPTION, &c.—The genus *Gentiana* of Linnæus has been divided by modern botanists into six or seven different genera; but to avoid confusion I shall generally retain the old name, as being that by which the plants are best known, merely noticing the new name, so that my readers may be able to recognise the plants if they should be met with under their new designation. The name of *Gentian* is said to be derived from *Gentius*, King of Illyria, who first tried the tonic properties of the roots.

1.—GENTIANA MACROPHYLLA, *Pall.* THE LONG-LEAVED GENTIAN.ENGRAVING.—*Bol. Mag.* t. 1414.

SPECIFIC CHARACTER.—Corolla five-cleft, rarely four-cleft. Flowers

crowded, sessile, verticillate. Leaves growing from the root and near the flower, leaving the stem bare between; lanceolate, very long, curved.

DESCRIPTION, &c.—This plant is more curious than beautiful; but it is remarkable for its long narrow leaves, which curl round, and for the naked part of its stem, between the leaves, which has a very singular appearance. It is quite hardy, and is generally propagated by seeds. It is a native of Siberia, and was introduced in 1796. The flowers are rather small, and of a very dark blue.

2.—GENTIANA LUTEA, *Lin.* THE YELLOW GENTIAN-ROOT.SYNONYMES.—*Asterias lutea*, *Borkh.*; *Swerbia lutea*, *Vest.*; common Gentian-root.ENGRAVINGS.—*Wood Med. Bot.* t. 156; *Church. et Stev. Med. Bot.* vol. IV.

SPECIFIC CHARACTER.—Calyx spathe-like. Corolla with a short tube, and a five-cleft limb, furnished with a green gland at the base of each segment. Flowers verticillate, subcymose. Leaves broad, ovate.

DESCRIPTION, &c.—The plant produces the *Gentian-root* used in medicine, and vulgarly called *Bitters*. These roots are long and thick; brown on the outside and wrinkled, but of a yellow colour within, and of a spongy substance. The flowers are yellow and spotted, and so different in their construction from those of the true

Gentians, as to have been made into a new genus by modern botanists, under the name of *Asterias*; from *Aster*, a star, in allusion to the rotate shape of the flowers. The species is a native of the Alps of middle Europe, and it was introduced in 1596.

3.—GENTIANA ASCLEPIADEA, Willd. THE ASCLEPIAS-LEAVED GENTIAN.

SYNONYMES.—*Coilantha asclepiadea*, *Renal*; *Dasystephana asclepiadea*, *Borkh.*

ENGRAVINGS.—*Bot. Mag.* t. 1078.

SPECIFIC CHARACTER.—Stem erect, simple, swollen at the joints, leaves stem-clasping, sessile, ovate-lanceolate. Corolla five-cleft, campanulate. Flowers opposite, axillary, nearly sessile.

DESCRIPTION, &c.—This very singular plant has been placed in a new genus by some botanists, on account of the shape of its flowers; the name of the new genus, *Coilantha*, signifying a concave flower. This species is a native of Germany, Switzerland, and France, where it grows in moist shady valleys, and never in situations that are open and exposed. In a garden it should be grown under the shade of other plants, and in a moist loamy soil. It was introduced before 1629, and is propagated by dividing the roots.

4.—GENTIANA PURPUREA, Lin. THE PURPLE GENTIAN.

SYNONYMES.—*G. punicea*, *Gesn.*; *Pneumonanthe purpurea*, *Schmid.*; *Coilantha purpurea*, *Borkh.*

ENGRAVINGS.—*Wood. Med. Bot.* t. 262; and *Bot. Rep.* t. 117.

SPECIFIC CHARACTER.—Radicls leaves ovate, five-nerved; stem

ones ovate-lanceolate; upper ones combined and sheathing at the base; corolla five-six-cleft; stamens five or six; calyx membranous, spathe-like; capsule fusiform.

DESCRIPTION, &c.—This is another species included in the genus *Coilantha*, the root of which is used in medicine. The flowers are of a leathery texture and purplish hue, dotted inside. The species is a native of the Alps of Europe, and it grows from one foot to two feet high. It was introduced in 1768.

5.—GENTIANA CAUCASICA, Sims. THE CAUCASIAN GENTIAN.

SYNONYMES.—*G. amatella*, *Pal.*; *G. collina*, *Adams*; *Eurythalia caucasica*, *G. Don.*

ENGRAVING.—*Bot. Mag.* t. 1038; and our *fig.* 3, in Plate 70.

SPECIFIC CHARACTER.—Stem quadrangular, ascending; leaves ses-

sile, ovate-acuminate, three-nerved; flowers axillary, single; peduncles as long as the calyx; corolla salver-shaped, five-cleft, bearded at the throat.

DESCRIPTION, &c.—A very pretty little biennial plant, a native of Mount Caucasus, which was introduced in 1804. It is easily known by the bearded throat of the corolla; the beard being quite white, and contrasting strongly with the dark-blue of the limb. This plant grows best in a calcareous soil, and is propagated by seeds.

6.—GENTIANA ALPINA, Vill. THE ALPINE GENTIAN.

SYNONYMES.—*G. acaulis*, var. *Frœl.*; *Ericala alpina*, *Borkh.*; *Hippion alpinum*, *Schmid.*

ENGRAVING.—*Lodd. Bot. Cab.* t. 476.

SPECIFIC CHARACTER.—Corolla campanulate, about equal in length to the stem; leaves ovate, rather fleshy, obtuse, nerveless. (*G. Don.*)

DESCRIPTION, &c.—This plant is very much like *G. acaulis*, and, like that species, has the flower much longer than the stem. The leaves of this plant are, however, nearly as broad as they are long; and the corolla may be called ten-cleft, as it has a lesser division between each of the five principal ones. Both the corolla and the calyx are slightly dotted. This species has an underground stem, and consequently throws up young plants or suckers, frequently at a considerable distance from the parent. It is a native of the Alps of Switzerland, and of the Pyrenees, whence it was introduced in 1817. It is quite hardy, but it grows best in a light loam, and in an open situation.



1. *Gentiana Saponaria*—2. *Gentiana adscendens*—3. *Gentiana fimbriata*.



7.—GENTIANA VERNA, *Lin.* THE SPRING GENTIAN.

SYNONYMES.—*G. prostrata*, *Slecht.*; *Gentianella dulcis*, *Ges.*;
Ericla verna, *Borkh.*; *Hippion verum*, *Schmid.*

ENGRAVINGS.—*Bot. Mag.* t. 491; *Lodd. Bot. Cab.* t. 62; *Eng.*
Bot. t. 493; and our *fig. 4*, in Pl. 70.

SPECIFIC CHARACTER.—Plant decumbent; leaves crowded; radicle
 ones larger than the others; corolla funnel-shaped, five-cleft.

DESCRIPTION, &c.—This beautiful little plant is a native of the Alps of Switzerland; but it is also found on some of the mountains in Ireland, and in Teesdale Forest, in the county of Durham. The flowers are of a beautiful bright blue, and have a very agreeable fragrance. They appear in the open air, in April; but by keeping them under glass, they may be brought forward in February. The plant grows best in a mixture of peat-earth, and loam, and it will only thrive in an open situation, where it can have abundance of free air.

8.—GENTIANA PNEUMONANTHE, *Lin.* THE CALANTHIAN VIOLET.

SYNONYMES.—*Gentiana linearifolia*, *Lam.*; *G. calathiana*, *Bauh.*;
Pneumonanthe vulgaris, *Schmid.*; *Cininalis Pneumonanthe*, *Borkh.*

VARIETIES.—These are very numerous, but the most distinct is that
 called *G. P. guttata*, figured in *Bot. Mag.* t. 1101.

ENGRAVINGS.—*Eng. Bot.* t. 20; *G. P. guttata*, *Bot. Mag.* t. 1101.

SPECIFIC CHARACTER.—Stem decumbent; leaves sublinear, obtuse;
 flowers pedunculate, terminal, and axillary; corolla campanulate, five-cleft.

DESCRIPTION, &c.—This is a very singular-looking plant, from the great disproportion that exists between the leaves and the flowers, the stem and the leaves being very small, and the flowers very large. The species is common in many parts of England; but the variety *guttata* is only found on the Continent. This variety differs from the species only in having a few white spots inside the flower.

9.—GENTIANA ACAULIS, *Lin.* THE STEMLESS GENTIAN, OR COMMON GENTIANELLA.

SYNONYMES.—*G. grandiflora*, *Pers.*; *Pneumonanthe acaulis*,
Schmid.; *Cininalis acaulis*, *Borkh.*; *C. longiflora*, *Manch.*; *C.*
grandiflora, *Mayer.*

ENGRAVINGS.—*Bot. Mag.* t. 52; *Eng. Bot.* t. 1594; and our *fig.*
5, in Pl. 70.

SPECIFIC CHARACTER.—Stem very short, quadrangular, one-
 flowered; flowers very large; corolla campanulate, five-ten-cleft;
 segments obtuse, mucronate; leaves with cartilaginous margins; radi-
 cle ones crowded, imbricated.

DESCRIPTION, &c.—This very beautiful plant is probably well known to most of the readers of this work, particularly to those who have visited the gardens of the London Horticultural Society, at Chiswick, in the month of April, as it forms there an edging to some of the borders, so conspicuous, from the beauty of its colour, that few persons can pass it by unnoticed. It is a native of the Alps of middle Europe and Siberia, and it has occasionally been found wild in Britain; though it is probably not a true native of this country, the plants found in a wild state having been, most likely, thrown out from some garden. It generally thrives best when grown in peat soil. There are many varieties, one of which has double flowers, and another, the flowers of which are quite white.

10.—GENTIANA ADSCENDENS, *Pal.* THE ASCENDING, OR PORCELAIN-FLOWERED GENTIAN.

SYNONYMES.—*G. decumbens*, *Lin.*; *G. pneumonanthe*, *Gmel.*;
Pneumonanthe adscendens, *Schmid.*; *Dasystephana adscendens*,
Borkh.

VARIETIES.—The most remarkable of these is a dwarf plant with a
 simple decumbent stem, figured in the *Bot. Mag.* t. 723.

ENGRAVINGS.—*Bot. Mag.* t. 705; and our *fig. 2*, in Plate 71.

SPECIFIC CHARACTER.—Stem decumbent, afterwards ascending.
 Leaves lanceolate; radicle ones elongated. Calyx cleft on one side,
 and terminating in three teeth on the other. Corolla campanulate,
 five-cleft, toothed between the segments.

DESCRIPTION, &c.—This is a very beautiful species from the singularly transparent hue assumed by the flowers, which have a remarkably delicate gloss, like that of fine china. The species is a native of Siberia,

whence it was introduced in 1799 ; and its root is occasionally used in medicine, on account of its fine aromatic bitter. It is perfectly hardy, but it can only be propagated by seeds, as it has a tap-root, and, of course, does not send up suckers like those species which have an underground stem, or creeping root. It flowers in July, and continues in blossom a long time.

11.—GENTIANA SEPTEMFIDA, *Frœl.* THE SEVEN-CLEFT, OR CRESTED GENTIAN.

SYNONYMES.—*Pneumonanthe septemfida*, *Schmid.* ; *Eurythale septemfida*, *Borkh.*

VARIETY.—*G. s. punctata*, *Sim.*, *Bot. Mag. t. 1410.* Corolla spotted.

ENGRAVINGS.—*Bot. Mag. t. 1229.*

SPECIFIC CHARACTER.—Corolla salver-shaped, five or seven cleft, with a small crested segment, between every two of the larger segments. Leaves opposite and crossed ; crowded, three-nerved.

DESCRIPTION, &c.—This is a very singular species, from the small crested segments which intervene between the larger segments. It is, however, more curious than beautiful, though the species is much handsomer than the variety. It is a native of the Persian Alps, near the Caspian Sea, the Crimea, and Mount Caucasus. It was introduced in 1804. It is quite hardy, and may be propagated by dividing the root.

12.—GENTIANA SAPONARIA, *Lin.* THE SOAPWORT-LIKE, OR BARREL-FLOWERED GENTIAN.

SYNONYMES.—*G. fimbriata*, *Vahl.* ; *G. Cateshæi*, *Walt.* ; *Pneumonanthe saponaria*, *Schmid.*

ENGRAVINGS.—*Bot. Mag. t. 1039* ; *Andr. Bot. Rep. t. 418* ; and our *fig. 1*, in Plate 71.

SPECIFIC CHARACTER.—Flowers sessile, in verticillate heads ; corolla somewhat ten-cleft, ventricose, closed ; alternate segments smaller than the others, and slightly fringed. Leaves ovate-lanceolate, three-nerved, very smooth.

DESCRIPTION, &c.—This is a very singular species, from the flowers never expanding, but always remaining closed at the point ; which circumstance, combined with the dark blue, and barrel-like form of the corolla, distinguishes it from all the other species. When the flower is opened artificially, the alternate segments will be found curiously fringed. It is a native of North America, and was introduced in 1776.

13.—GENTIANA OCHROLUCA, *Lin.* THE CREAM-COLOURED GENTIAN.

SYNONYMES.—*G. villosa*, *Willd.* ; *G. saponaria*, *Walt.* ; *Pneumonanthe villosa*, *Schmid.*

ENGRAVING.—*Bot. Mag. t. 1551.*

SPECIFIC CHARACTER.—Stem slightly angular, rough. Leaves ovate-lanceolate, wrinkled. Flowers sessile, forming a terminal fascicle. Corolla five-cleft, campanulate, ventricose ; segments acute, closed.

DESCRIPTION, &c.—This species is very nearly allied to *G. Saponaria* ; but it differs in the colour of the corolla, which is white with green veins ; and in its shape, which is longer, sharper-pointed, and with the alternate segments not fringed. It is a native of North America, growing in dry, sandy fields, and on gravelly hills. It was introduced in 1803. It flowers in September.

14.—GENTIANA INTERMEDIA, *Sim.* THE INTERMEDIATE GENTIAN.

SYNONYMES.—*G. ochroluca*, *Pursh.* ; *G. saponaria*, *Nichx.* ; *Pneumonanthe intermedia*, *G. Don.*

ENGRAVING.—*Bot. Mag. t. 2303.*

SPECIFIC CHARACTER.—Plant smooth ; stem erect, simple. Flowers

in a terminal, few-flowered head. Calyx five-cleft ; segments leafy ; sometimes one longer than the corolla. Corolla ventricose, five-six-cleft ; closed ; interior segments simple. Leaves obovate-oblong, slightly three-nerved.

DESCRIPTION, &c.—This species is evidently nearly allied to the two preceding ones ; but it is much less handsome, as the flowers are not produced in clusters or whorls, and each is almost hidden in its leafy calyx. The species is a native of North America, and was introduced in 1820. It flowers in October.

15.—*GENTIANA INCARNATA*, *Sim.* THE FLESH-COLOURED GENTIAN.SYNONYME.—*Pneumonanthe incarnata*, *G. Don.*ENGRAVING.—*Bot. Mag.* t. 1856.

SPECIFIC CHARACTER.—Stem erect, simple, slightly swollen at the joints; leaves oval; petioles decurrent; flowers aggregate, terminal; calyx leafy; corolla not quite closed; segments unequal.

DESCRIPTION, &c.—This species is by no means handsome, as the flowers are of a pale dingy pink, and less perfect in their shape than those of the preceding species. It was introduced by Mr. Lyon, who was a botanical collector in North America, about the year 1812. It grows best in a peaty soil.

16.—*GENTIANA VISCOSA*, *Ait.* THE CLAMMY GENTIAN.SYNONYMS.—*Exacum viscosum*, *Smith*; *Hippion viscosum*, *Dec.*ENGRAVINGS.—*Bot. Mag.* t. 2135; and our *fig.* 1, in Plate 72.

SPECIFIC CHARACTER.—Stem cylindrical, with opposite branches;

leaves ovate-lanceolate, three or five nerved; stem clasping or connate; corolla salver-shaped; tube twice the length of the calyx; limb five-cleft; segments lanceolate, ovate, spreading.

DESCRIPTION, &c.—This is a very handsome biennial, a native of the Canaries, requiring protection during winter. It partakes more of the character of *Chironia* than of *Gentiana*. Introduced in 1781.

OTHER SPECIES OF GENTIAN.

These are very numerous, but those which have been described are by far the most ornamental.

GENUS III.

ERYTHRÆA, *R. Br.* THE ERYTHRÆA.*Lin. Syst.* TETRANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft. Corolla funnel-shaped; limb short; segments concave. Anthers twisted. Style erect. Stigma two-cleft, roundish. Capsule linear.

DESCRIPTION, &c.—The species of this genus are all hardy, or nearly so; and the greater part of them are annuals, even those marked biennials usually flowering the first year if sown early enough in spring. Almost the only perennial species is a native of Nepal. *Erythræa* is from a Greek word signifying red.

1.—*ERYTHRÆA AGGREGATA*, *D. Don.* THE CLUSTERED ERYTHRÆA.

ENGRAVING.—Sweet's Brit. Flow. Gard. t. 137.

SPECIFIC CHARACTER.—Stem quadrangular, very much branched, decumbent; branches dichotomous, crowded, few-flowered; leaves

spathulate, obtuse, petiolate, attenuated towards the base; flowers sessile; bracts linear, obtuse, rather long; tube of the calyx very short.

DESCRIPTION, &c.—This very pretty little plant is admirably adapted for rock-work, as it produces its bright rose-coloured flowers when it is scarcely two inches high, beginning to flower early in spring, and continuing till the middle of November. It is a native of Nepal, and was introduced in 1824. It grows best in light sandy loam and peat, and ripens abundance of seed.

GENUS IV.

SABBATIA, *Pursh.* THE SABBATIA.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five or twelve cleft. Corolla rotate; are twisted spirally. Capsule one-celled; two-valved; the margins five or twelve parted. Anthers rolling back after the discharge of the pollen. Style erect; divided into two long spreading stigmas, which of the valves bearing the seeds.

DESCRIPTION, &c.—Nearly all the species belonging to this genus are biennial plants, with angular stems and branches. The leaves are opposite and sessile, and the flowers are generally rose-coloured or white. They are all natives of North America. The genus is named in honour of two Italian botanists, called Sabbati.

1.—SABBATIA CALYCOSA, *Pursh.* THE CALYCOSE SABBATIA.

SYNONYMS. — *Chironia dichotoma*, *Walt.*; *Chironia calycosa*,
Michx.

ENGRAVINGS.—*Bot. Mag.* t. 1600; and our *fig.* 2, in Pl. 72.

SPECIFIC CHARACTER.—Stem diffuse, dichotomous; leaves ovate-lanceolate; calyx six-cleft, leafy, exceeding the corolla.

DESCRIPTION, &c.—This plant is a hardy biennial, propagated by seeds, and consequently easily lost. The flowers are very pretty, but the plant has a somewhat stiff appearance, from the angular disposition of the branches. The species is a native of North America, whence it was introduced in 1812; but, though quite hardy, it is now rarely to be seen in British gardens.

OTHER SPECIES OF SABBATIA.

There are several other species with pink or purple flowers; but, as they are biennials, and of course easily lost, as they are propagated by seed, which only ripens in favourable seasons, they are rarely seen in British gardens. There is one species with white flowers, *S. paniculata*, which is said to be a perennial, but I have never seen it.

CHAPTER XXXIII.

SPIGELIACEÆ.

CHARACTER OF THE ORDER.—Flowers regular, of equal parts. Calyx free. Limb of corolla equal; valvate in aestivation. Stamens four or five, rising from the corolla. Pollen trigonal; the angles globular. Style inserted in the top of the ovary; articulated. Capsule in two divisions. Seeds small, with an immediate placentation; testa simple. Embryo small, straight, in fleshy copious albumen. (*G. Don.*)

DESCRIPTION, &c.—This order was formerly included in *Gentianaceæ*, but it differs from that order in the style being articulated, and in the immediate placentation of the seeds. Two of the genera contain plants which are cultivated in British gardens.

GENUS I.

SPIGELIA, *Lin.* THE WORM-GRASS.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted. Corolla funnel-shaped, with a five-cleft limb. Stamens five. Stigma simple. Capsule in two cocci, each of which is two-valved and many-seeded. With a five central placenta, pedicellate at the base.

DESCRIPTION, &c.—The plants belonging to this genus have all fibrous roots and opposite connate leaves, which are quite entire. The flowers are in terminal secund spikes, which are somewhat revolute; the flowers



1. *Hypericum viscosum* — 2. *Sabularia calycosa* — 3. *Houstonia coerulæa* — 4. *Houstonia serpyllifolia*.

in the lower part of the spike. The name of *Spigelia* was given in honour of a Flemish botanist, named *Spigelius*, who afterwards became a professor in the University of Padua. The species are natives of different parts of America.

1.—*SPIGELIA MARYLANDICA*, *Lin.* THE MARYLAND WORM-GRASS.

SYNONYMS.—*Lonicera Marylandica*, *Lin.*; *Periclymenum Virginianum*, *Catesb.*; *Anthelmia Virginica*, *Living.*; Indian Pink.

ENGRAVINGS.—Bot. Mag. t. 80; Bot. Cab. t. 930; Med. Bot. vol. f. t. 7; and our fig. 5, in Pl. 73.

SPECIFIC CHARACTER.—Stem quadrangular; all the leaves opposite.

DESCRIPTION, &c.—This plant was at first classed by Linnæus with the Honeysuckles, which, indeed, it greatly resembles in the shape of its flowers, though not in their disposition. Its roots are fleshy, and they are sold in the shops under the name of Worm-grass, or Indian pink. The plant is mucilaginous, with rather an agreeable taste. The species is a native of Maryland, and the other warmer parts of North America; notwithstanding which it is hardy in British gardens. It is, however, very difficult to propagate; as its roots do not send up suckers, and it rarely ripens seeds in this country.

GENUS II.

HOUSTONIA, *Lin.* THE HOUSTONIA.

Lin. Syst. TETRANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx four-cleft. Corolla funnel-shaped, with a four-cleft limb. Stamens four. Stigma bifid. Capsule two-celled, with a fungous placenta annexed to the dissepiments.

DESCRIPTION, &c.—This genus was originally included in Rubiaceæ; to the plants in which order, indeed, it seems to bear a much greater affinity than to those properly belonging to the order in which it is now placed. De Candolle removed it to Gentianaceæ; and it has been placed by Mr. George Don in its present position. It consists of dwarf plants, natives of the warmer parts of North America; and it was named in honour of Dr. William Houston, the highly-valued friend of Philip Miller.

1.—*HOUSTONIA CÆRULEA*, *Lin.* THE BLUE-FLOWERED HOUSTONIA.

SYNONYME.—*Rubia parva*, *Bau.*

ENGRAVINGS.—Bot. Mag. t. 370; and our fig.-3, in Pl. 72.

SPECIFIC CHARACTER.—Radical leaves ovate; stem leaves various; peduncles two-flowered.

DESCRIPTION, &c.—This very pretty little plant is a native of Virginia, whence it was introduced by the late Mr. Menzies, in 1785. It is quite hardy in British gardens, where, if it is kept moist, it will continue producing a succession of flowers during the spring, summer, and autumn. From the smallness of its size, it looks best on rock-work, or in a pot.

2.—*HOUSTONIA LONGIFOLIA*, *Gärtn.* THE LONG-FLOWERED HOUSTONIA.

SYNONYME.—*H. angustifolia*, *Michx.*

ENGRAVING.—Bot. Mag. t. 3099.

SPECIFIC CHARACTER.—Stem erect, branched, quadrangular, slightly

pubescent below the joint; leaves linear-oblong; radical ones attenuated at the base, pubescent, ciliated; stipules broadly ovate, entire, or slightly tridentate, membranaceous; stamens enclosed in the flower.

DESCRIPTION, &c.—This species has very small flowers, but they are of a brilliant white, slightly yellow at the base, and the leaves are of a fine dark green. The plant has a pretty effect on rock-work. It is a native of North America, and was introduced about 1830.

3.—HOUSTONIA SERPYLLIFOLIA, *Michx.* THE THYME-LEAVED HOUSTONIA.ENGRAVINGS.—Bot. Mag. t. 2822; and our *fig.* 4, in Pl. 72.

SPECIFIC CHARACTER.—Tufted; stems numerous; leaves spatulate, slightly hairy; peduncles elongated, one-flowered.

DESCRIPTION, &c.—This is a pretty little plant, with star-like white flowers, very suitable for rock-work. It is a native of North America, whence it was introduced in 1827. There are several other species, but they are seldom seen in British gardens.

CHAPTER XXXIV.

MENYANTHACEÆ.

CHARACTER OF THE ORDER.—Calyx five-parted. Corolla subrotate, with a five-parted spreading limb. Segments with a flat disc, which is bearded or squamulose at the base, or bearded lengthwise; having ascending or simple margins, inflexed in aestivation. Stamens five, alternating with the segments of the corolla. Style one. Stigma

two-lobed; lobes toothed. Hypogynous glands five, alternating with the stamens. Capsule one-celled; many-seeded; two-valved; but in aquatic species valveless; axils of valves seminiferous, that is, the seeds are attached to parietal placentas on the edges of the valves. (*G. Don.*)

DESCRIPTION, &c.—All the species belonging to this order are floating, aquatic, or marsh herbs. The leaves are alternate, having the petioles somewhat dilated, and sheathing at the base.

GENUS I.

MENYANTHES, *Lin.* THE BUCK-BEAN.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft; persistent. Corolla hairy. Stigma two-cleft. Capsule one-celled; two-valved.

DESCRIPTION, &c.—The genus *Menyanthes* of Linnæus was divided into two genera by M. Ventenat, but the difference between them is so slight, that I have not thought it worth while to keep them apart. These differences are simply that, in *Menyanthes*, the segments of the corolla are bearded lengthwise, and the leaves are trifoliate; and in *Villarsia* the segments of the corolla are bearded at the base, and the leaves are simple. The word *Menyanthes* signifies the flower-of-a-month, the flowers remaining open about that time.

1.—MENYANTHES TRIFOLIATA, *Lin.* THE TRIFOLIATE BUCK-BEAN, OR MARSH TREFOIL.

ENGRAVINGS.—Wood, Med. Bot. vol. v. t. 2; Stev. et Church. Med. Bot. t. 46; Eng. Bot. t. 495.

SPECIFIC CHARACTER.—Leaves trifoliate; racemes thyrsoid, axillary; segments of the corolla bearded lengthwise.

DESCRIPTION, &c.—A well-known British plant, frequent on the banks of ponds, lakes, and slow-running rivers. The flowers are white, tinged with rose colour, and beautifully fringed. The roots are fleshy, and intensely bitter. There is an American variety, which is much more robust than this species, and the flowers of which are of a pale pink, and very handsome.

2.—MENYANTHES SARMENTOSA, *Sims.* THE RUNNING BUCK-BEAN.SYNONYMES.—*Villarsia sarmentosa*, *Ram. et Schultes.*; *V. germi-*
nata, *R. Br.*ENGRAVINGS.—Bot. Mag. t. 1328; our *fig.* 4, in Pl. 73.

SPECIFIC CHARACTER.—Runners creeping; leaves cordate-suborbiculate, spreading, dotted beneath; panicles opposite to the leaves; terminal; seeds glabrous.

DESCRIPTION, &c.—This species is remarkable for its runners, which resemble those of the Strawberry-plant, and extend to a great length. It is a native of New Holland, whence it was introduced in 1806. It should be



1 *Polemonium, Sibericum* — 2 *Polemonium, Humile* — 3 *Polemonium, Richardsoni* .
 4. *Menyanthes, Sarmientosa* — 5. *Spigelia, Marylandica*

grown in peat earth, and generally does best in a pot, plunged in the soil in the bank of a piece of water; the use of the pot being to confine the roots, which otherwise would spread so rapidly as soon to become troublesome.

OTHER SPECIES OF MENYANTHES.

These are very numerous, but all the most ornamental kinds require the protection of a greenhouse.

CHAPTER XXXV.

POLEMONIACEÆ.

CHARACTER OF THE ORDER.—Calyx tubular, five-cleft. Corolla with a five-lobed limb, imbricate or twisted in æstivation. Anthers sagittate, incumbent, two-celled. Style very long. Stigma three-lobed; lobes linear, obtuse. Capsule three-celled, three-valved, generally oblong. Placenta trigonal, central, applied to the angles of the dissepiments. Seeds mucilaginous; albumen fleshy; embryo large, straight.

DESCRIPTION, &c.—The plants belonging to this order are generally ornamental; but the greater part of the hardy genera contain only annuals.

GENUS I.

POLEMONIUM, *Lin.* THE GREEK VALERIAN.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx campanulate, five-cleft. Corolla tubate, with a short tube, and a five-lobed limb. Stamens five, equal, inserted in the throat of the corolla. Filaments dilated at the base, and forming a continuous ring, which nearly closes the mouth of the tube. Anthers incumbent. Capsule roundish, with crustaceous valves, covered with a permanent calyx. Cells many-seeded. Seeds oblong, filled with large albumen.

DESCRIPTION, &c.—All the species are hardy herbaceous plants, with very ornamental flowers, which are either blue or white. The word Polemonium is said to signify war, and to arise from the circumstance of the plant having occasioned a war between two kings, each of whom claimed the honour of its discovery, on account of its valuable medicinal properties. The story is, however, extremely vague; and it is more than probable that the singular name of the genus alluded to the plant being useful in war, on account of its property of stanching blood.

1.—POLEMONIUM CŒRULEUM, *Lin.* THE BLUE GREEK VALERIAN, OR JACOB'S-LADDER.

SYNONYMES.—*Valeriana cœrulea*, *Bauh.*; *V. græca*, *Dod.*; *Ladder of Heaven*; *Charity*.

ENGRAVINGS.—*Eng. Bot. t. 17*; *Bot. Reg. t. 1303*.

SPECIFIC CHARACTER.—Stem glabrous; leaves pinnate; leaflets ovate-lanceolate, acuminate, glabrous; segments of the calyx ovate, acuminate; flowers erect, corymbose; segments of corolla roundish.

DESCRIPTION, &c.—This species is found in poor sandy soils, in various parts of England, and throughout the whole of the north of Europe. There are numerous varieties—one of which has the flowers white, another the leaves variegated, and another the flowers white and blue. Another variety, that figured in the *Botanical Register*, is a native of North America, and has large flowers of a most beautiful pale blue.

2.—POLEMONIUM SIBIRICUM, *D. Don*. THE SIBERIAN POLEMONIUM.SYNONYMES.—*P. lacteum*, *Leh.* ; *P. dissectum*, *Rehb.*

ENGRAVINGS.—Sweet's Brit. Flow. Gard. t. 182; and our fig. 1, in Pl. 73.

SPECIFIC CHARACTER.—Leaves bipinnate, pubescent; leaflets linear-lanceolate, acute; corymb panicleate, crowded; calyx hairy; segments of the corolla broadly ovate, acute.

DESCRIPTION, &c.—This is a very handsome species. The stems are angular; several rising erect from the same plant, and growing from a foot to eighteen inches high. The leaves are pinnate; and the leaflets are either pinnate or pinnatifid, being frequently crowded together, so as to appear tufted. The flowers are white, and much smaller than those of the other species, though they are very handsome, from their abundance, and the manner in which they are disposed. The species is a native of Siberia, whence it was introduced in 1800. It will grow freely in any common garden soil that is light and sandy, but it requires an open situation, where it can have abundance of free air.

3.—POLEMONIUM RICHARDSONII, *Graham*. DR. RICHARDSON'S GREEK VALERIAN.SYNONYMES.—*P. speciosum*, *Fisch.* ; *P. ceruleum*, var. *nanum*, *Hook.*

ENGRAVINGS.—Bot. Mag. t. 2600; and our fig. 3, in Plate 73.

SPECIFIC CHARACTER.—Stem hairy, angular, erect; leaves pinnate,

with numerous leaflets; pinne ovate, rotund, mucronate, pubescent beneath; flowers corymbose, naked; segments of the corolla obtuse, crenulated; roots subfusiform, very long.

DESCRIPTION, &c.—The root of this plant is very remarkable, as it is frequently three or four feet long, and as thick as a finger, though the plant is not more than six inches high. The root is also branched at the tip like a grappling-iron, as though to take a firm hold of the loose sand in which the plants generally grow. The root is yellow, and much resembles that of licorice. The plant is a native of the Great Bear Lake, where it was found by Dr. Richardson, in 1825, growing in 66° north latitude. It will, of course, bear any degree of cold in this country; but it is easily injured by an excess of moisture, and requires a deep sandy soil.

4.—POLEMONIUM HUMILE, *Ram. et Schult.* THE DWARF GREEK VALERIAN.SYNONYMES.—*P. villosum*, *Swt.* ; *P. lanatum*, *Fisch.* ; *P. corymbosum*, *B Gmel.* ; *P. gracile*, *Dougl.* ; *P. Richardsonii*, *B G. Don.*

ENGRAVINGS.—Bot. Reg. t. 1304; Swt. Brit. Flow. Gard., t. 266; and our fig. 2, in Plate 73.

SPECIFIC CHARACTER.—Stem pilose, angular, erect; leaves with many pairs of leaflets, which are ovate, bluntish, pilose on both surfaces; flowers a little panicle, drooping; segments of the corolla roundish, crenulated. (*G. Don.*)

DESCRIPTION, &c.—This species, like *P. Richardsonii*, has the root excessively elongated. The stem is erect, and covered with soft hairs; the petioles are slightly winged and dilated at the base, which is tinged with purple. The leaflets are hairy on both sides, and delicately fringed at the margin. The flowers have rather a disagreeable smell. This species is very nearly allied to *P. Richardsonii*, but it is not so handsome. It was raised from seeds collected by Dr. Richardson during the Arctic expedition, which took place about 1828, and it has been also found in Siberia. It should be grown in poor gravelly soil, kept moist; as, when grown in rich mould, it produces more leaves than flowers.

5.—POLEMONIUM MEXICANUM, *Cerv.* THE MEXICAN POLEMONIUM.

ENGRAVING.—Bot. Reg. t. 460.

SPECIFIC CHARACTER.—Leaves pinnate, with many leaflets; terminal, one or three lobed; flowers nodding; calyx covered with viscid hairs.

DESCRIPTION, &c.—This species is a native of Mexico, whence it was sent to Madrid in 1815. The flowers are small, and more tubular than those of most of the other species, but they do not possess much beauty. The plant is, indeed, scarcely worth the trouble of cultivating, as it is rather tender.

6.—POLEMONIUM PULCHERRIMUM, *Hook.* THE PRETTIEST POLEMONIUM.ENGRAVING.—*Bot. Mag.* t. 2979.

SPECIFIC CHARACTER.—Stems numerous, ascending; segments of the calyx pubescent; leaflets ovate, glabrous; panicles sub-corymbose; segments of the corolla oval, subacute.

DESCRIPTION, &c.—The root of this species is partly subfusiform and partly fibrous; the tap root being very much attenuated at the base, and striking deeply into the earth. There are numerous slender stems, which are much branched, and which bear a great quantity of flowers, having very small leaflets. The flowers are very numerous, and they are produced in small terminal corymbs. The species is a native of the Rocky Mountains of North America, whence it was introduced in 1827, and where there is a variety with white flowers. Both are perfectly hardy in British gardens. The following observations, extracted from the *Bot. Mag.*, point out the more important differences and peculiarities of this plant:—"In size it comes nearest to *P. Richardsonii*, but it is more tufted in its growth, having smaller and shorter leaflets, numerous and ascending stems, much smaller and differently-coloured flowers, with their segments greatly narrower, and truly oval. The bright colour of the blossoms is retained long after the plant is dried." It should be grown in moist gravelly soil, which should never be suffered to become too dry.

7.—POLEMONIUM REPTANS, *Lin.* THE CREEPING GREEK VALERIAN.ENGRAVING.—*Bot. Mag.* t. 1837.

SPECIFIC CHARACTER.—Root creeping; stems leafy, glabrous; leaves pinnate; leaflets seven, ovate, acute, glabrous; flowers nodding; segments of the corolla wedge-shaped.

DESCRIPTION, &c.—This is a very pretty little plant, with a creeping stem, and the flowers in a loose paniced corymb, varying from dark-blue to white. It is a native of North America, whence it was introduced in 1758. It is of easy culture in any common garden soil, but it is best adapted for rockwork.

OTHER SPECIES OF POLEMONIUM.

P. GRACILE, *Willd.*

A native of Dahuria, with pale-blue flowers; nearly allied to the common species. Introduced in 1828.

P. PULCHELLUM, *Bunge.*

A dwarf plant; a native of Siberia, with blue flowers, having white anthers and stigma. There is a variety the flowers of which are white. This species has not yet been introduced.

P. ACUTIFLORUM, *Willd.*

A native of the North-west coast of America; not introduced. This is the same as the *P. boreale* of Adams.

P. MOSCHATUM, *Worm.*

Nearly allied to *P. Richardsonii*, but with a musky scent. A native of North America; introduced in 1827.

GENUS II.

PHLOX, *Lin.* THE PHLOX.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx deeply five-cleft, connivent. Corolla cuneated segments. Stamens inserted above the middle of the tube, silver-shaped; tube elongated; limb twisted in aestivation, with Cells of capsule one-seeded. (*G. Don.*)

DESCRIPTION, &c.—The species are herbaceous perennial plants, sometimes, but rarely, becoming shrubby at the base, with simple leaves, which are generally opposite. The flowers are terminal, and are generally

produced in either panicles or corymbs. All the plants belonging to this genus are easily distinguished by the singular shape of the bud, which resembles that of a flame; the segments of the limb of the corolla are twisted, so as to lie over each other, like those of the Periwinkle, and this construction is not found in any other genus belonging to the order. The word *Phlox* signifies flame. The old name of these plants was *Lychnidea*.

§ 1. *Leaves broad; barren stems wanting.*

1.—*PHLOX ACUMINATA*, Pursh. THE POINTED-LEAVED PHLOX, OR COMMON LYCHNIDEA.

SYNONYMES.—*Phlox decussata*, Lyons; the cross-leaved Phlox.

ENGRAVING.—Bot. Mag. t. 1880.

SPECIFIC CHARACTER.—Erect, pubescent; stem angular; leaves ovate-lanceolate, acuminate; lower ones narrow towards the base, and

sub-petiolate, exactly decussate, rough on the upper surface, and hairy below; flowers in a panicle corymb, on very short pedicels; segments of the corolla rounded; tube pubescent; segments of the calyx bristly.

DESCRIPTION, &c.—This is a very handsome species, the flowers varying in colour from a dark blue or purple to a rose-colour. The stem, which is square, grows about three feet high, and the leaves are decussate; that is, if one pair points north and south, the next pair points east and west, and so on. The leaves are all hairy beneath, and rough on the upper surface. This species is a native of Georgia and South Carolina, whence it was introduced in 1812. It is rather more tender than most of the other species of *Phlox*, and it flowers very late in the season, its blossoms seldom expanding before September or October. It will grow in any common garden soil, and it is propagated by dividing the root.

2.—*PHLOX ODORATA*, Swt. THE SWEET-SCENTED PHLOX.

SYNONYME.—*Phlox bimaculata*, Hort.

ENGRAVINGS.—Sweet's Brit. Flow. Gard. t. 224; and our fig. 2, in Pl. 74.

SPECIFIC CHARACTER.—Stem erect, branching in the upper part, and

spotted with irregular scabs or marks; leaves acuminate, smooth, rough at the margin; flowers disposed in a panicle raceme, sweet-scented; teeth of the calyx ovate, very short; segments of the corolla wedge-shaped.

DESCRIPTION, &c.—This species is remarkable for the beauty of its flowers, which are of a bright rose-colour, and remarkably sweet-scented. The stem generally grows about three feet high, and the panicle of flowers is frequently above a foot in length. The blossoms, which begin to expand in June, remain open for a long time. It will grow in any common garden soil; and though the stems are frequently killed down to the ground in severe weather, the roots will generally send up fresh shoots in spring. The species is a native of North America, and was introduced about 1825. It is remarked that the flowers of this plant will preserve their fragrance for a very long time when dried. The plant is increased by dividing its roots, or by cuttings, which strike readily.

3.—*PHLOX REFLEXA*, Swt. THE REFLEXED-LEAVED PHLOX.

ENGRAVING.—Sweet's Brit. Flow. Gard. t. 232.

SPECIFIC CHARACTER.—Stem clothed with a short rough pubescence, spotted. Leaves very much reflexed, smooth, and shining. Flowers

in a close, crowded panicle, very sweet-scented; teeth of the calyx lanceolate, spreading; tube of the corolla smooth, curved, segments of the limb roundly obovate, imbricated at the base.

DESCRIPTION, &c.—This species very closely resembles the last, excepting in the leaves, which are very distinct, and in the colour of the flowers, which is much darker; besides which, each segment of the limb is marked with a dark purple spot at the base. The stamens are more seen than in most of the other kinds of *Phlox*, and the pollen is of a golden yellow. This plant is evidently a hybrid, but its exact parentage is not known. It grows best in peat soil, and it is propagated by cuttings, which, if taken off early in spring, and struck under hand-glasses, will make flowering plants the following summer.



1 *Phlox ciliolata*. 2 *Phlox odorata*. 3 *Phlox canadensis*. 4 *Van Houttei Phlox*.

4.—PHLOX PYRAMIDALIS, *Smith*. THE PYRAMIDAL PHLOX.

ENGRAVING.—Sweet's Brit. Flow. Gard., t. 233.

SPECIFIC CHARACTER.—Stem erect, scabby, spotted. Leaves cordate, oblong, acuminate; smooth, but rough at the margin. Flowers in a close compact panicle, forming a pyramid on the main stem. Segments of the corolla cuneate, truncate; teeth of the calyx suberect, lanceolate, acute.

DESCRIPTION, &c.—This species, though it bears considerable resemblance to the last, is yet very inferior in beauty, from the small size of its flowers and their somewhat dingy colour. It grows three or four feet high, and has smooth, handsome leaves. It is quite hardy, and will grow readily in any common garden soil that is tolerably rich, provided the ground be occasionally watered in hot, dry weather. It is propagated by cuttings planted under hand-glasses in spring, or it may be increased by dividing the roots. It is a native of North America, whence it was introduced in 1800 and it flowers from June to October.

5.—PHLOX PENDULIFLORA, *Swt*. THE DROOPING-FLOWERED PHLOX.

ENGRAVING.—Sweet's Brit. Flow. Gard., 2d ser. t. 46.

SPECIFIC CHARACTER.—Stems subflexuose, very slightly quadrangular, rough, spotted. Leaves oblong, lanceolate, acuminate, subsessile; upper surface smooth and shining; under surface hairy and rough at the margin and on the nerves. Corymb many-flowered, paniculate, drooping before expansion; calyx pubescent; segments lanceolate, mucronate; segments of the corolla roundish, imbricated.

DESCRIPTION, &c.—This is a very beautiful species, from the large size of its separate flowers, and their brilliant colour. It grows to a considerable height, and forms a stately plant when covered with its flowers. It grows best when planted in a bed of peat mould. It is a native of North America, and was introduced in 1824. It takes its name of penduliflora from the side-branches of the panicle drooping a little before the flowers expand.

6.—PHLOX CORDATA, *Ell*. THE HEART-LEAVED PHLOX.

ENGRAVINGS.—Sweet's Brit. Flow. Gard., 2d ser. t. 13; Paxton's Mag. of Bot. vol. 1, p. 268.

SPECIFIC CHARACTER.—Leaves oblong-cordate, subacuminate, rough

at the margin. Corymb paniculate; calyx terminating in five long bristles.

DESCRIPTION, &c.—This species being a native of Carolina, is rather tender in British gardens, and requires protection during severe winters. It is, however, worth some trouble in cultivating, on account of the delicate tint of its flowers, which are of a pale rose-colour, and their delightful fragrance. The species was introduced in 1826, and it flowers from June till October. A very splendid variety of this species was raised by Mr. Clark of East Retford. The flowers are very large, and have a white eye.

7.—PHLOX LONGIFLORA, *Penn*. THE LONG-FLOWERED PHLOX.

ENGRAVING.—Sweet's Brit. Flow. Gard, 2d ser. t. 31.

SPECIFIC CHARACTER.—Stem rough, but not hairy, slightly spotted. Leaves lanceolate-acuminate, very smooth and shining, rough at the

margin; upper ones broader than the lower ones. Raceme paniculated; segments of the corolla roundish, tube very long; teeth of the calyx lanceolate, acute.

DESCRIPTION, &c.—This is one of the few species of Phlox which have white flowers, and it has also the peculiarity of producing numerous stems from the same root. The leaves are opposite, and cross each other like those of *P. acuminata*, but the species is easily distinguished by the colour of its flowers; while it differs from the other white-flowered species in the great length of the tube of the corolla. It flowers very late in the season; the blossoms continuing expanded till killed by the frost. It is a native of North America, whence it was introduced in 1827.

8.—PHLOX GLABERRIMA, *Lin.* THE SMOOTH-STALKED PHLOX.

ENGRAVING.—Sweet's Brit. Flow. Gard. 2d ser. t. 36.

SPECIFIC CHARACTER.—Tufted; stem erect, very smooth; leaves linear-lanceolate, quite smooth and glossy; corymb terminal in three

tufts, each consisting of three or four flowers; teeth of the calyx acuminate, spreading; segments of the corolla rounded.

DESCRIPTION, &c.—This is rather a dwarf plant, as it grows in dense tufts with erect stems, from a foot to eighteen inches high. In most of the other species the stem is rough and hairy, but in this it is perfectly smooth. The flower-stem is also distinctly divided into three tufts of flowers. The species is a native of North America, whence it was introduced in 1725. It flowers from June till August, and grows well in any common garden soil.

9.—PHLOX SCABRA, *Sut.* THE ROUGH-LEAVED PHLOX.

SYNONYMES.—*P. Sickmanni*, *Lchm.*; *P. Americana*, *Hort.*

ENGRAVING.—Sweet's Brit. Flow. Gard. t. 248.

SPECIFIC CHARACTER.—Stem glabrous in the lower part, but hairy above; leaves oblong-lanceolate, acute, very rough and rasp-like on

the upper surface, undulated at the margin; flowers in a very loose panicle; calyx hairy; teeth awl-shaped, erect; tube of the corolla curved, hairy; segments of the limb obovate, spreading.

DESCRIPTION, &c.—The flowers of this species are very handsome, but the leaves have nothing to recommend them, being coarse on the upper surface, and of a dingy green. The flowers are very fragrant. The species is a native of North America, whence it was introduced in 1812; and it is easily propagated by its suckers, which it sends up in great abundance.

10.—PHLOX CAROLINA, *Lin.* THE CAROLINA PHLOX.

SYNONYMES.—*Lychnidea Caroliniana*, *Mart.*; rough-stemmed *Lychnidea*.

ENGRAVING.—Bot. Mag. t. 1344.

SPECIFIC CHARACTER.—Leaves lanceolate, very smooth; stem rough; corymb subsistigiate.

DESCRIPTION, &c.—This species was the first kind of Phlox introduced into our gardens, as it appears to have been grown by Mr. Cowell, a nurseryman at Hoxton, before the year 1728. The flowers are large, and very handsome, with a dark, star-like mark in the centre. The corymb is rather small and roundish. The species is a native of South Carolina, and is consequently somewhat tender in our gardens.

11.—PHLOX SUFFRUTICOSA, *Willd.* THE SHRUBBY PHLOX.

SYNONYMES.—*P. nitida*, *Pursh.*; shining-leaved Phlox.

ENGRAVING.—Bot. Reg. t. 68.

SPECIFIC CHARACTER.—Stem erect, very smooth, round, slightly spotted; leaves ovate-oblong, somewhat fleshy, shining above, and of

a very dark green, but pale below; corymb fastigiate, lower branches elongated and naked; segments of the corolla broadly ovate, and somewhat retuse; teeth of the calyx lanceolate, mucronate.

DESCRIPTION, &c.—This species is nearly allied to Phlox Carolina, but in this both the stem and leaves are smooth, and the flowers are of a much darker and more brilliant purple. The leaves are also darker, more shining, and of a much thicker texture; and the stem, which is somewhat shrubby at the base, continues partly undecayed and in leaf during the winter. The species is a native of South Carolina, and was introduced in 1790.

12.—PHLOX TRIFLORA, *Michx.* THE THREE-FLOWERED PHLOX.

SYNONYME.—*P. carnea*, *Bot. Mag.*

ENGRAVINGS.—Sweet's Brit. Flow. Gard. t. 29; and Bot. Mag. t. 2155.

SPECIFIC CHARACTER.—Stems erect, branching, somewhat pubescent; leaves lanceolate, smooth, each branch having a three-flowered corymb; teeth of the calyx linear.

DESCRIPTION, &c.—This species has a very loose branching corymb of large pale-pink flowers. It grows well in the open ground to the height of about a foot or eighteen inches, and continues flowering from July till October. It is a native of North America, whence it was introduced in 1816.

13.—PHLOX COLDRYANA, *Paxt.* MR. COLDRY'S PHLOX.

ENGRAVINGS.—Paxton's Mag. of Bot. vol. 7, p. 197; and our *fig.* 1, in Pl. 74.

ovate-lanceolate, acuminate, subcordate, slightly scabrous on the upper surface; corymb spreading; segments of the corolla cuneate; teeth of the calyx very short.

SPECIFIC CHARACTER.—Stems erect, slightly downy, spotted; leaves

DESCRIPTION, &c.—This very handsome species is a hybrid, raised about 1835, in the Bristol Nursery. It grows about two feet high, and is of a compact bushy habit of growth. It should be grown in light soil, partly composed of leaf mould; and it should be removed to a fresh bed about every third year, or the flowers will degenerate in both size and colour. The plant is propagated by dividing the roots.

OTHER SPECIES OF PHLOX BELONGING TO § 1.

P. OMNIFLORA, Hort.

This is a remarkably handsome species, with an elongated corymb of clear white flowers, which it continues producing from June till the latter end of October. It rarely grows above a foot or eighteen inches high, and is equally well suited to keep in a pot or to plant in the open ground. Even when it has flowered in the open ground all the summer, it may be taken up and put into a pot to force for flowering in early spring. It is thus one of the most useful kinds of Phlox for a suburban garden.

VAN HOUTTE'S PHLOX. *Bot. Reg.* for 1843, t. 5; and our *fig.* 4, in Pl. 74.

This is a very beautiful garden variety, raised by a nurseryman at Ghent. It is very pretty, being distinctly marked with a crimson star on a white ground, and the flowers are delightfully fragrant. Its habit of growth resembles that of *P. omniflora*, and it requires the same treatment.

P. PANICULATA, Lin.

This was one of the first species introduced, having been sent to England in 1732. It is a native of Virginia, where it is found in rich moist meadows. The flowers of the species are purple; but there is a variety the flowers of which are white, with a slight tinge of red.

P. UNDULATA, Ait.

This is probably only a variety of the preceding species, as the only difference is in the leaves, which are somewhat undulated; and in the stem, which grows tall and stronger, frequently attaining the height of five feet. It is a native of Virginia, and was introduced in 1759.

P. LATIFOLIA, Michx.

Is probably only a variety of *P. pyramidalis*, but the flowers are larger, and of a darker colour. It is a native of Carolina, and was introduced in 1812.

P. MACULATA, Lin.

This species has a stem marked with very conspicuous brown spots, with violet-coloured flowers. It is a native of Carolina, and was introduced in 1740.

P. NITIDA, Pursh.

This is a very handsome species, nearly allied to *P. Carolina*, but with large purple flowers and smooth shining leaves. It is a native of South Carolina, and it was introduced in the year 1800.

§ 2. *Leaves broad ; plants with barren stems.*14.—PHLOX OVATA, *Lin.* THE OVATE-LEAVED PHLOX.

ENGRAVING.—Bot. Mag. t. 528.

SPECIFIC CHARACTER.—Radical leaves ovate, acute, somewhat fleshy ; corymb subfastigate ; segments of the corolla undulated, retuse.

DESCRIPTION, &c.—This species was first described by Linnæus as having its flowers produced singly, and not in corymbs ; but the specimen from which Linnæus wrote his description was probably an abortive one. The flowers are large and very handsome. The segments of the corolla are quite distinct, and bend back, so as to give quite a peculiar character to the whole. The species is a native of North America, whence it was introduced in 1759.

15.—PHLOX STOLONIFERA, *Curt.* THE CREEPING PHLOX.SYNONYMES.—*P. reptans*, *Michx.* ; *P. crassifolia*, *Lodd.* ; *P. prostrata*, *G. Don.*

ENGRAVINGS.—Bot. Mag. t. 563 ; Sweet's Brit. Flow. Gard., 2d set., t. 293 ; Lodd. Bot. Cab., t. 1596 ; and our fig. 1, in Pl. 75.

SPECIFIC CHARACTER.—Stoloniferous, creeping ; leaves fleshy, spatulate, obovate.

DESCRIPTION, &c.—This is a very handsome and well-known species, of which there are two very distinct varieties : one with violet-coloured flowers, and the other with flowers of a reddish-purple, and thick fleshy leaves. The species was first discovered in Georgia, in 1786 ; but living plants were not brought to England till 1801. The variety was introduced in 1825. Both the species and the variety are dwarf plants, suitable for rockwork.

16.—PHLOX PILOSA, *Mill.* THE HAIRY PHLOX.SYNONYMES.—*P. aristata*, *Michx.* ; *Lychnoides Marilandica*, *Ray.* ; *Lychnidea umbellifera*, *Pluk.*

ENGRAVINGS.—Bot. Mag., t. 1307 ; and Lodd. Bot. Cab., t. 1371.

SPECIFIC CHARACTER.—Hairy ; stem erect ; leaves linear-lanceolate ; segments of the calyx subulate ; tube of the corolla curved, pubescent.

DESCRIPTION, &c.—This is by no means a handsome species, on account of the length and number of the segments of the calyx. The flowers are comparatively small, and few in number. The species is a native of North America, whence it was first introduced in 1759 ; but as it was soon lost, and was reintroduced in 1764, that date is frequently affixed to it in the catalogues. There are two varieties ; the flowers of one of which are flesh-coloured, with a dark-red centre, and those of the other white, with a pink centre. Both kinds become quite white when dried. The species is tolerably hardy, and the flowers are produced from May till July.

17.—PHLOX AMENA, *Sims.* THE PLEASING PHLOX.SYNONYMES.—*P. pilosa*, *Michx.* ; Fraser's hairy Phlox.

ENGRAVING.—Bot. Mag., t. 1308.

SPECIFIC CHARACTER.—Hairy ; stem decumbent ; leaves ovate-lan-

ceolate ; segments of the calyx subulate-acuminate ; tube of the corolla straight, glabrous.

DESCRIPTION, &c.—This is a very handsome species, and quite distinct from the last, of which it has been sometimes supposed to be a variety. It is a native of South Carolina, where it was discovered in 1786, though it was not introduced till 1809. The flowers are large, of a bright rose-colour, and they are so disposed as to make the corymb appear quite round.



1 *Phlox stolonifera*. — 2 *Phlox procumbens*. — 3 *Phlox sericea*.
Phlox pubulata. — 5 *Phlox nivalis*.

18.—PHLOX CANADENSIS, Sweet. THE BLUE CANADIAN PHLOX.

ENGRAVINGS.—Sweet's Brit. Flow. Gard., t. 221; and our fig. 3, in Pl. 74.

ovate, upper ones broadly lanceolate; corymbs few-flowered, compact; segments of the calyx subulate-linear; segments of the corolla broadly obcordate; tube curved, longer than the calyx.

SPECIFIC CHARACTER.—Stems erect, subpubescent; lower leaves
DESCRIPTION, &c.—The plant grows in a thick tuft, each root producing a great many erect branches. The leaves are smooth, but slightly fringed with short hairs round the margin. The flowers are blue, tinged with lilac, and are disposed in small, few-flowered panicles. The species is a native of Canada, whence it was introduced in 1826, and it is quite hardy in British gardens, where it flowers from May to October. It is generally increased by dividing the roots.

19.—PHLOX DIVARICATA, Lin. THE SPREADING-FLOWERED PHLOX.

SYNONYMES.—*Lychnidea Virginiana*, Pluk.; the early-flowering
Phlox.

ENGRAVING.—Bot. Mag., t. 163.

SPECIFIC CHARACTER.—Stem branched, spreading; peduncles twin.

Leaves broadly-lanceolate, upper ones alternate. Flowers in a loose, spreading panicle; segments of the corolla somewhat wedge-shaped, bilid; tube curved.

DESCRIPTION, &c.—A very handsome species of Phlox, with large, pale-blue flowers. It seldom exceeds a foot in height, and produces its flowers in great abundance in April and May. It does not, however, continue so long in flower as most of the other species of the genus. It is a native of North America, and was introduced in 1746.

§ 3. *Leaves narrow.*

20.—PHLOX PROCUMBENS, Lhm. THE PROCUMBENT PHLOX.

ENGRAVINGS.—Sweet's Brit. Flow. Gard., 2d. ser., t. 7; and our
fig. 2, in Pl. 75.

SPECIFIC CHARACTER.—Stem procumbent, branched; branches ascending, and slightly hairy. Leaves lanceolate, acute, attenuated

at the base, very smooth, ciliated at the margin. Segments of the calyx linear, acute; segments of the corolla cuneate, obcordate; tube hairy, erect, twice as long as the calyx.

DESCRIPTION, &c.—A dwarf plant, with numerous procumbent stems, each generally dividing into several branches at the extremity, and frequently sending out roots at the joints near the base. The flowers which terminate the branches can scarcely be said to form a panicle, there seldom being above two or four to each branch. The plant is a native of North America, whence it was introduced in 1829, and it flowers in May and June. It is propagated either by cuttings, or by dividing the root.

21.—PHLOX SUBULATA, Lin. THE AWL-LEAVED PHLOX.

ENGRAVINGS.—Bot. Mag., t. 411; and our fig. 4, in Pl. 75.

SPECIFIC CHARACTER.—Leaves subulate, hairy. Flowers terminal, sometimes twin.

DESCRIPTION, &c.—This is a very pretty little species, admirably adapted for rockwork. Its stems are procumbent, and when left to themselves either hang down in a very graceful manner, or trail on the ground. The flowers are produced in great abundance and are very pretty, as they are generally of a delicate pale pink, with a dark eye. The stems are also pink. The species is a native of Virginia, whence it was introduced in 1786. The flowers are produced in April or the beginning of May, and are easily injured by the cold winds which sometimes prevail at that season. It is always propagated by cuttings, as the root descends, and will not bear dividing.

22.—PHLOX NIVALIS, Lodd. THE SNOW-WHITE PHLOX.

ENGRAVINGS.—Lodd. Bot. Cab. t. 1780; Swt. Brit. Flow. Gard. t. 185; and our *fig. 5*, in Pl. 75.

SPECIFIC CHARACTER.—Stem suffruticose, very much branched, procumbent; branches ascending, thickly covered with short hairs; flowers

terminal, in threes. Leaves linear, fasciculate, recurved, ciliated at the margin. Calyx hairy; tube of the corolla twice as long as the calyx; segments of the corolla obovate, somewhat plicate.

DESCRIPTION, &c.—This is a very singular little plant, from the curious manner in which the branches are clothed with short recurved linear leaves, which give the plant a heath-like appearance when not in flower. The flowers are large, and of a snowy white. They are produced in great abundance, and look exceedingly well on rockwork. The plant is a native of Carolina, whence it was introduced in 1820. It should be grown in sand or peat, and it is propagated by cuttings.

23.—PHLOX SETACEA, Lin. THE BRISTLED-LEAVED PHLOX.

ENGRAVINGS.—Bot. Mag. t. 415; and our *fig. 3*, in Pl. 75.

SPECIFIC CHARACTER.—Leaves bristly, very smooth. Flowers solitary.

DESCRIPTION, &c.—This is a very handsome species, from the large size and bright colour of the flowers. The stems are at first procumbent; but they are ascending at the tip. The species is nearly allied to *P. subulata*, and requires the same treatment. It is a native of Carolina, and was introduced in 1788. It flowers in April and May, and it is propagated by cuttings. It is rather tender, and requires protection during severe winters.

CHAPTER XXXVI.

CONVOLVULACEÆ.

CHARACTER OF THE ORDER.—Calyx of five-sepals; sepals permanent, equal or unequal, disposed in one, two, or three series, often enlarged round the fruit. Corolla monopetalous, hypogynous, regular, tubular, campanulate or funnel-shaped; having the limb sometimes of five plaits, and sometimes of five lobes, which are twisted in æstivation. Stamens five, opposite the sepals, and therefore alternating with the lobes or plaits of the corolla, inserted more or less towards the bottom of the corolla; filaments usually unequal, dilated at the base, sometimes villous, naked, or furnished with scales, usually inclosed, rarely exserted; anthers long, usually sagittate, and adnate at the base, often twisted afterwards. Nectarium or hypogynous disk annular, surrounding the ovarium in most of the species, more or less showy.

Ovarium usually simple, two-four celled, rarely almost one-celled, or altogether one-celled: sometimes the ovarium is double or quadruple; in each cell there is one or two erect ovula. Style usually simple, entire, or more or less deeply cleft; rarely two. Stigmas acute, flattened or globose; in those with the simple style two-lobed. Fruit a capsule or a dry berry, one-four-celled; cells one, two-seeded. Capsule usually dehiscing valvately, rarely transversely. Seeds usually rounded on one side, and flattened on the other, inserted by the base, glabrous or villous; having the testa usually black and hard. Albumen mucilaginous. Cotyledons foliaceous and corrugated. Radicle incurved, inferior. (*G. Don.*)

DESCRIPTION, &c.—Most of the plants belonging to the order Convolvulaceæ are herbaceous, either annuals or perennials; occasionally becoming shrubby near the base, but very rarely having a woody stem. The stems are generally twining or creeping, and very seldom erect. The roots are frequently tuberous, and used in medicine; and all the plants abound in a milky, acrid juice. The flowers are generally very showy, and the leaves simple and alternate. These plants are found in almost every part of the world. The name of Convolvulus, from which that of the order is derived, signifies to entwine; and refers to the habit of growth of the species.



1 *Convolvulus sepium* Americanus. 2 *Convolvulus linifolius*. 3 *Convolvulus Bryoniaefolia*.
 4 *Ipomoea pandurata*. 5 *Ipomoea sagittifolia*.

GENUS I. CONVOLVULUS, *Lin.* THE BIND-WEED.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx of five sepals. Corolla campanulate. Style one; stigmas two, linear-cylindrical, often revolute. Ovarium two-celled, four-ovulate. Capsule two-celled. (*G. Don*).

DESCRIPTION, &c.—The plants commonly called Convolvulus were divided into the two genera, Convolvulus and Ipomoea, by Linnæus, principally on account of the shape of the lobes of the stigma, which in Convolvulus are slender and quite distinct, while in Ipomoea they form a globose head. Modern botanists have made several other genera out of the old genus Convolvulus, the principal of which, are:—*Calystegia*, from two Greek words, signifying a covered calyx, in allusion to two large bracts which inclose the flower; and *Pharbitis*, which is said to signify, highly-coloured, and which is distinguished by the capsule having three or four cells instead of two. The first of these genera includes the common bind-weed of the hedges, and the allied species; and the second, the major Convolvulus and other species with brilliantly-coloured flowers. All the species described in the present work will be given under their Linnæan names of Convolvulus and Ipomoea.

1.—CONVOLVULUS CHINENSIS, *Ker.* THE CHINESE BIND-WEED.

SYNONYMES.—*Convolvulus japonicus*, *Banks.*

ENGRAVING.—*Bot. Reg.*, t. 322.

SPECIFIC CHARACTER.—Stems twisted, nearly simple, angularly

striated. Leaves secund, fleshy, hastate. Peduncles solitary, fleshy, longer than the leaves.

DESCRIPTION, &c.—This is a very pretty little plant, with purplish crimson flowers, marked with a pale yellow star. The root is creeping, and spreads rapidly. The leaves are fleshy, halbert-shaped, and of a greyish green. The plant is well deserving of cultivation; the only objection to it being the short duration of its flowers, which open early in the morning and often fade before the middle of the day. It is a native of China, whence it was introduced in 1816.

2.—CONVOLVULUS SCAMMONIA, *Lin.* THE COMMON SCAMMONY.

SYNONYMES.—*C. Syriacus*, *Tourn.*; *Scammonia Syriaca*, *Bauh.*

ENGRAVING.—*Sweet's Brit. Flow. Gard.*, 2d series, t. 173.

SPECIFIC CHARACTER.—Leaves sagittate or truncate. Peduncles cylindrical, three-flowered; bracts lanceolate, remote from the calyx.

DESCRIPTION, &c.—This species is remarkable for its long, fusiform root, which abounds in an acrid, milky juice, and is used in medicine. The stems are numerous, and generally grow from ten to fifteen feet high, twining themselves round any object they can meet with, that will afford them support. The flowers are large and white, greatly resembling those of the common bind-weed of the hedges, but produced in much greater abundance. The species is perfectly hardy, and continues to flower till late in the autumn. It is generally increased by seeds, which it ripens freely. It is a native of the Levant, and was introduced before 1596.

3.—CONVOLVULUS BRYONIEFOLIUS, *Sims.* THE BRYONY-LEAVED CONVULVULUS.

ENGRAVINGS.—*Bot. Mag.*, t. 943; and our *fig. 3*, in Pl. 76.

SPECIFIC CHARACTER.—Leaves seven-lobed, palmate, hispid; middle lobes sinuated. Peduncles axillary, very long, articulated. Flowers solitary

DESCRIPTION, &c.—This very beautiful little plant is of a dark rose colour. The leaves are hairy on both sides; and though they vary considerably in shape, they are generally divided into seven unequal lobes, of which the central one is much the largest. The petioles are generally as long as the leaves, and channelled on the upper

side. The peduncles of the flowers are also very long, and spring from the axils of the leaves, being jointed or articulated with the stem. It is a native of China, whence it was introduced in 1802. It is quite hardy in the open border, flowering from June till August, and perfecting its seeds in the autumn.

4.—CONVOLVULUS ALTHÆOIDES, *Lin.* THE MARSH-MALLOW-LIKE CONVULVULUS.

SYNONYMS.—*C. argenteus*, *Bauh.*; *C. Althæifolius*, *Clus.*; *Papaver cornutum*, *Ger.*; Silky-leaved Convolvulus.

ENGRAVING.—*Bot. Mag.*, t. 359.

SPECIFIC CHARACTER.—Lower leaves cordate, sinuated, silky; upper ones deeply cut; lobes linear, spreading.

DESCRIPTION, &c.—This is a most elegant plant, remarkable for the silvery whiteness of its leaves, and its beautiful rose-coloured flowers. It is a native of the south of Europe, being found in great abundance on the mountains of Naples, and of Spain and Portugal. It was introduced in 1656. It flowers in June and July, and is increased by dividing its stoloniferous roots, as it seldom ripens its seed in this country. It requires a slight protection during very severe winters.

5.—CONVOLVULUS AMERICANUS. THE AMERICAN CONVULVULUS.

SYNONYMS.—*C. sepium*, *var. Americanus*, *Sims*; *Calystegia inflata*, *Desf.*; the American Bear-bind.

ENGRAVINGS.—*Bot. Mag.*, t. 732; and our *fig. 1*, in Pl. 76.

SPECIFIC CHARACTER.—Leaves sagittate; peduncles quadrangular; one-flowered; bracts cordate, shrouding the calyx.

DESCRIPTION, &c.—This very beautiful plant is nearly allied to the common great bind-weed, or large white convolvulus of the hedges. It is, however, much handsomer, the leaves being larger, and the flowers of a deep rose-colour. It is a native of North America, whence it was introduced about 1750; and it is quite hardy in British gardens, flowering abundantly, and retaining its flowers much longer than the common wild plant, which it so nearly resembles. The near approach of the bracts to the calyx, mark it as of the modern genus, *Calystegia*, which is distinguished by this peculiarity. This species of *Convolvulus* produces a very good effect, when trained to trellis-work; and there is a very striking instance of this in the garden of the Dowager Duchess of Bedford, at Camden Hill.

6.—CONVOLVULUS RENIFORMIS, *Spreng.* THE KIDNEY-LEAVED CONVULVULUS.

SYNONYME.—*Calystegia reniformis*, *R. Br.*

ENGRAVINGS.—*Sweet's Brit. Flow. Gard.*, t. 181; and our *fig. 2*, in Pl. 76.

SPECIFIC CHARACTER.—Stem angularly branched, elongated, prostrate; leaves kidney-shaped, fleshy; peduncles round; bracts cordate, emarginate, close to the calyx. Root succulent, creeping.

DESCRIPTION, &c.—This is a pretty little species, very desirable for rockwork or covering a bank, as its stems and branches lie flat on the ground, and are not only very numerous, but extend to a great length. The species is a native of New Holland, whence it was introduced in 1822. It is easily propagated by dividing the roots; but it requires protection when the winter happens to be severe.

7.—CONVOLVULUS DAHURICUS, *W. Herb.* THE DAURIAN CONVULVULUS.

SYNONYME.—*Calystegia daurica*, *R. Br.*

ENGRAVING.—*Bot. Mag.*, t. 2609.

SPECIFIC CHARACTER.—Root creeping; stem tomentose; leaves oblong, cordate, glabrous, but with a soft tomentum on the margin and

nerves of the under surface. Peduncles axillary, one-flowered, tomentose; bracts ovate, close to the calyx. Segments of the calyx lanceolate, acute, outer two broader than the others. Style longer than the stamens.

DESCRIPTION, &c.—A pretty little plant, with pink flowers and cordate leaves. A native of Siberia, whence it was introduced in 1820. It is quite hardy in British gardens, and it is propagated either by seeds, or by

dividing its creeping, fleshy roots. All the species of this habit of growth are apt to become troublesome, particularly in small gardens, from the rapidity with which they spread through a border, their roots taking firm hold of the soil, and destroying those of every other plant. To avoid this inconvenience, all the species with creeping roots do best cultivated in pots, sunk in the ground.

OTHER SPECIES OF CONVULVULUS.

These are numerous, but only a few of them are cultivated in British gardens, and they differ very slightly from those that have been already described.

GENUS II.

IPOMŒA, *Lin.* THE IPOMŒA.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx of five sepals. Corolla campanulate. | Ovarium two-celled; cells two-seeded. Capsule two-celled; cells
Stamens inclosed. Style one; stigma two-lobed; lobes capitate. | two-seeded. (*G. Don.*)

DESCRIPTION, &c.—It has been already mentioned that the plants composing the genus *Ipomœa* are distinguished from those belonging to *Convolvulus* by the capitate lobes of the stigma. By far the greater number of the species require a stove in England; and even some of those which will flower in the open air during summer, are killed by the first frost in winter. The flowers are all exceedingly beautiful, but they are of short duration. The word *Ipomœa* signifies “like the *Convolvulus*,” from the great resemblance between the flowers of the two genera.

1.—IPOMŒA PANDURATA, *Lin.* THE POTATO VINE.

SYNONYMS.—*Convolvulus panduratus*, *Michx.*; *C. candicans*,
Sol.; Tennessee Bind-weed.

ENGRAVINGS.—*Bot. Reg.*, t. 588; *Bot. Mag.*, t. 1603; and our
fig. 4, in Pl. 76.

SPECIFIC CHARACTER.—Leaves cordate or panduriform, acuminate,
entire; peduncles many-flowered; segments of the calyx obtusely
nerved.

DESCRIPTION, &c.—This species varies very much in its leaves and flowers; but it is always distinguished by its tuberous cylindrical root, which is generally about the thickness of a man's wrist, two or three feet long, and furnished with eyes like a potato; and hence its American name of “potato vine.” The root, however, is not eatable, being extremely bitter; and, indeed, it is used in medicine as a kind of jalap. The stem is twining, and the leaves vary very much in shape; those near the root being large and cordate, and those of the stem being frequently lobed, so as to become panduriform, or fiddle-shaped. The flowers are produced in panicles, and vary considerably in size; but the limb of the corolla is always white, and the tube dark, though the latter varies from a pink to deep crimson or purple. The species is a native of North America, from Canada to Carolina, and it was introduced in 1732. When grown from imported roots, it sometimes appears quite hardy, and sometimes tender, according to the part of America from which the tubers were brought. It is propagated by dividing the tubers, as every eye will grow, like those of a potato. Even when the stems are killed down to the ground, fresh shoots will generally rise in spring from the eyes of the tubers. A variety of this species has been found in America with double flowers, a very rare circumstance in any plant belonging to the order *Convolvulaceæ*.

2.—*IPOMŒA SAGITTIFOLIA*, Ker. THE SAGITTATE-LEAVED IPOMŒA.

SYNONYMES.—*Convolvulus sagittifolius*, Michx.; *C. speciosus*, Walt.; *C. carolinensis*, Catesb.; Catesby's *Ipomœa*.

ENGRAVINGS.—Bot. Reg., t. 437; and our fig. 5, in Plate 76.

SPECIFIC CHARACTER.—Stem twining, very smooth; leaves sagittate-oblong, deeply sinuated; auricles subacuminate; peduncles one-flowered; segments of the calyx rotundately oval.

DESCRIPTION, &c.—This species is remarkable for the shape of its leaves, which are decidedly sagittate, that is, resembling the head of an arrow. The species is a native of Carolina, where it is said to grow wild along the sides of salt waters, that is, among bushes and saline plants. It is, consequently, very difficult to cultivate in this country. It was introduced about the year 1818. In America, the Indians are said to use the juice of this plant to preserve themselves from the bite of the rattle-snake. This species is often confounded with *Ipomœa sagittata*, a native of the South of Europe, with rose-coloured flowers, which was introduced in 1826; but this latter species is said not to have tuberous roots like the American kind, and to be much more easy of cultivation. It is, however, rarely met with in British gardens.

OTHER SPECIES OF IPOMŒA.

These are either too tender for the open air in British gardens, or too shrubby for the present work.

CHAPTER XXXVII.

BORAGINÆÆ.

CHARACTER OF THE ORDER.—Calyx five-parted, rarely four-parted, permanent. Corolla hypogynous, monopetalous, usually regular, five-cleft, rarely four-cleft, imbricate in reversion. Stamens epipetalous, equal in number to the segments of the corolla, and alternating with

them, rarely more. Ovarium four-parted, four-seeded, or simple, two-four-celled, with a definite number of pendulous ovula. Carpels four, distinct, or joined at bottom; or a berry containing two-four pyrenes. Seeds exalbuminous. Embryo inverted. (*G. Don.*)

DESCRIPTION, &c.—By far the greater number of the plants included in this order are herbaceous, but they are not particularly ornamental. The flowers are generally secund, that is, growing all on the same side of the flower-stem; and the flower-stem is frequently rolled up before the flowers expand, as is the Forget-me-not, which is one of the plants belonging to this order. The fruit of nearly all the plants belonging to this order is composed of four distinct carpels or nuts. The leaves are alternate, without stipules, and usually rough. Most of the plants have a weedy look; and very few are sufficiently ornamental to be worth cultivating in the flower-garden.

GENUS I.

BORAGO, Tourn. THE BORAGE.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Corolla rotate, throat furnished with emarginate vaulted processes; anthers distinct, oblong or lanceolate, awned,

fixed by the inner side, conniving into a cone. Nuts four, one-celled, turbinate, fixed to the bottom of the calyx. (*G. Don.*)

DESCRIPTION, &c.—The name of this genus is said to have been originally *Corage*, signifying to act upon the heart, in allusion to the cordial and invigorating effects of the common Borage, when taken medicinally. The plants have all rough, lanceolate or oblong leaves, and a coarse habit of growth; with fusiform roots and drooping flowers, disposed in panicles. There are very few species, only one being worth cultivating in gardens.

1.—BORAGO LAXIFLORA, *Dec.* THE LOOSE-FLOWERED BORAGE.

SYNONYMES.—*Anchusa laxiflora*, *Lois.*; Bell-flowered Borage.
 ENGRAVING.—*Bot. Mag.*, t. 1798.

SPECIFIC CHARACTER.—Leaves alternate, ovate, acuminate, ciliated.
 Peduncles axillary, solitary, one-flowered, longer than the leaves.

DESCRIPTION, &c.—This plant is very unlike all the other species in the same genus, and even in the same order; as its flowers are produced singly, and are bell-shaped. The plant is also armed with short, stiff, shining hairs, which look like spines; and these hairs not only cover the stem, but form a fringe round the margins of the leaves. It is a native of Corsica, whence it was introduced in 1813. It is quite hardy in British gardens; and as the stems are decumbent, with several growing from the same root, it is very suitable for rockwork. It is generally propagated by seeds, which it ripens freely.

OTHER SPECIES OF BORAGO.

B. CRASSIFOLIA, *Vent.*

This is said to be a handsome species, with racemes of purple flowers, and fleshy leaves. It is a native of Persia, and was introduced in 1822.

B. LONGIFOLIA, *Desf.*

The leaves are linear-lanceolate, and the flowers blue. It is a native of Numidia, where it grows in damp places. It was introduced in 1825.

B. ORIENTALIS, *Lin.*

This species has been lately placed in a new genus, called *Trachystemon*, from the roughness of the stamens. It is a native of Constantinople, whence it was introduced in 1752. The flowers are purplish-blue, and are produced in racemes in March.

B. CRETICUM, *Willd.*

A native of the Cephalonian Islands, introduced in 1823, and nearly allied to the preceding species, but flowering about a month later.

GENUS II.

CYNOGLOSSUM, *Tourn.* THE HOUND'S TONGUE.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted. Corolla funnel-shaped, | Stigma nearly simple. Carpels four, one-celled, depressed, echinate, or subrotate; throat furnished with erect processes. Stamens inclosed. | fixed to the central column.—(*G. Don.*)

DESCRIPTION, &c.—These are tall, robust plants, covered with down, so as to be soft to the touch. The leaves are large, and in the shape of a dog's tongue, and hence the generic name; the English name being a literal translation of the botanic one. The flowers are disposed in second, terminal racemes; and the carpels are covered with glochidate prickles. Most of the species are natives of Europe; and several of them are British plants.

1.—CYNOGLOSSUM PICTUM, *Ait.* THE PAINTED, OR MADEIRA, HOUND'S TONGUE.SYNONYMES.—*C. creticum*, *Vill.*; *C. cheirifolium*, *Jacq.*ENGRAVINGS.—*Bot. Mag.*, t. 2134; and our *fig. 2*, in Plate 77.

SPECIFIC CHARACTER.—Calyx and corolla nearly equal; segments

subrotund, dilated. Leaves lanceolate, woolly; upper ones cordate at the base.

DESCRIPTION, &c.—This plant, though called the Madeira Hound's Tongue, is also found in all the southern parts of Europe and in Barbary. It is distinguished from the common British Hound's Tongue by the stem-leaves being cordate at the base, and the flowers much larger, of a pale-blue, beautifully veined with deep-blue. The plant is a hardy biennial, flowering from May to August; and it was introduced in 1658.

2.—CYNOGLOSSUM OMPHALODES, *Lin.* THE BLUE NAVELWORT.

SYNONYMES.—*Symphytum minus*, *Bauh.*; *Borago minor*, *Morris*; *Omphalodes verna*, *Dec.*; *Picota verna*, *Ram. et Schult.*; the comfrey-leaved *Omphalodes*.

ENGRAVINGS.—*Bot. Mag.*, t. 7; and our *fig. 1*, in Plate 77.

SPECIFIC CHARACTER.—Root creeping. Leaves oval, sometimes cordate.

DESCRIPTION, &c.—This very pretty little plant is a native of Spain and Portugal, where it is found in woods and moist shady places. It flowers in March and April, and in autumn it sends forth a number of trailing shoots, which take root at the joints, and in this manner the plant spreads rapidly. It will grow in any common garden soil which is not too dry; but it thrives most under a wall in a north border.

3.—CYNOGLOSSUM NITIDUM, *Willd.* THE SMOOTH OR SHINING NAVELWORT, OR HOUND'S TONGUE.

SYNONYMES.—*C. lusitanicum*, *Brot.*; *Omphalodes nitida*, *Hoff.*, et *Link.*; *O. lusitanica*, *Tourn.*; *Picota nitida*, *Ram. et Schult.*

ENGRAVING.—*Bot. Mag.*, t. 2529.

SPECIFIC CHARACTER.—Corolla rotate. Leaves lanceolate, acute, shining. Radical leaves petiolate; stem-leaves sessile. Seeds pitcher-shaped, toothed at the margin.

DESCRIPTION, &c.—This species is a hardy perennial, a native of Portugal, where it grows in moist shady woods and low valleys. The flowers are small and blue, and they are produced from April till June. The species was introduced in 1812, and it is quite hardy in British gardens.

GENUS III.

SYMPHYTUM, *Tourn.* THE COMFREY.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted. Corolla cylindrically campanulate; throat furnished with five subulate, vaulted processes, which

connive into a cone. Nuts four, one-celled, ovate, fixed to the bottom of the calyx, imperforated at the base. (*G. Don.*)

DESCRIPTION, &c.—All the plants belonging to this genus are herbaceous, with broad rough leaves, and terminal twin racemes of flowers. The name *Symphytum* is from two Greek words, signifying to make whole, in reference to the healing properties of the species.



1. *Cynoglossum Omphaloides*. 2. *Cynoglossum pictum*. 3. *Lymphium officinale*. var. *Bohemianum*.
 4. *Lymphium Caucasicum*. 5. *Lymphium asperum*. 6. *Cynoglossum pictum*.

§ 1. *Roots tuberous, or fleshy.*1.—SYMPHYTUM BOHEMICUM, *Schmidt*. THE BOHEMIAN COMFREY.SYNONYME.—*S. officinale* var. *bohemicum*, *D. Don*.ENGRAVINGS.—*Swt. Brit. Flower Gard.* 2d series, t. 304; and our *fig. 3* in *Plate 77*.

SPECIFIC CHARACTER.—Leaves attenuated at the base. Calyx erect; corolla tubular, contracted at the mouth; stigma exserted.

DESCRIPTION, &c.—The stem of this species grows about a foot high. The leaves are large, strongly veined, and wrinkled. The flowers are numerous, and of a dark crimson. They are globular, and contracted at the mouth like those of some kinds of heath. The species is a native of Bohemia; but the year of its introduction is not known. It flowers in May, and is increased by dividing the roots.

OTHER SPECIES OF SYMPHYTUM BELONGING TO § 1.

S. BULBOSUM, *Schmidt*.

A native of the Apennines, with bulbous roots and yellow flowers. Introduced in 1829, and flowering from June till August.

S. CORDATUM, *Walst. et Kit.*

A native of Hungary, with tuberous, creeping roots, large hairy leaves, and cream-coloured flowers. It was introduced in 1813, and it flowers from May till July. This is the *S. pannonicum* of Persoon.

§ 2.—*Roots fibrous.*2.—SYMPHYTUM ORIENTALE, *Willd.* THE EASTERN COMFREY.SYNONYME.—*S. Constantinopolitanum*, *Burb.*ENGRAVING.—*Bot. Mag.*, t. 1912.

SPECIFIC CHARACTER.—Leaves lanceolate-ovate, undulated, decur-

rent in the petiole; flowers in dense racemes; corolla funnel-shaped; limb with acute segments.

DESCRIPTION, &c.—This is a very pretty species of Comfrey, from the flowers being white, and rather larger than those of the ordinary kinds. It begins to flower early in spring, and continues producing fresh blossoms nearly all the summer. It is not, however, a suitable plant for a small garden, as it grows about two feet high, and the leaves are large and somewhat coarse. It is a native of Turkey, where it grows on the banks of rivers; and it was introduced in 1752.

3.—SYMPHYTUM CAUCASICUM, *Marsch.* THE CAUCASIAN COMFREY.ENGRAVINGS.—*Bot. Mag.*, t. 3188; and our *fig. 4*, in *Pl. 77*.

SPECIFIC CHARACTER.—Stem branched, lower part hairy, upper

part glutinous; leaves ovate-lanceolate, attenuated at the base, semi-decurrent, hairy; calyx obtuse.

DESCRIPTION, &c.—This plant grows about two feet high, and the stem, though hairy near the base, becomes smooth and covered with a glutinous substance on the upper part. The flowers are produced in long terminal racemes, each stem producing two racemes. The flowers are very pretty, being at first of a delicate pink, and afterwards becoming a beautiful azure-blue. The species is a native of the country around Mount Caucasus, whence it was introduced in 1830. It is, perhaps, the most ornamental species of the genus, on account of the smoothness and small size of the leaves, and the great abundance and brilliant colours of the flowers. It is quite hardy in British gardens.

4.—*SYMPHYTUM ASPERRIMUM*, Don. THE PRICKLY COMFREY.ENGRAVINGS.—Bot. Mag., t. 929 ; and our *fig. 5*, in Pl. 77.

SPECIFIC CHARACTER.—Stem-leaves prickly, oval, acute, stalked ; floral leaves opposite ; racemes twin.

DESCRIPTION, &c.—This species is by far the largest of the genus, as it grows to the height of five feet. The stem and stem-leaves are covered with small curved prickles, and the flowers are very showy. The species is a native of the neighbourhood of Mount Caucasus, and it was introduced in 1801. It is of the easiest culture.

5.—*SYMPHYTUM TAURICUM*, Willd. THE TAURIAN COMFREY.SYNONYME.—*S. bullatum*, Dec.

ENGRAVING.—Bot. Mag., t. 1787.

SPECIFIC CHARACTER.—Leaves cordate-ovate, rough, hairy ; limb of the corolla contracted, or cup-shaped ; stem branched, hispid, spotted.

DESCRIPTION, &c.—The stem of this species is scarcely a foot high, and it is hairy and spotted with small reddish dots. The branches spread very much, and the leaves have a singular blistered appearance, as though the nerves had become contracted, and had drawn up the fleshy part. The flowers are of a pale yellow, or cream-colour, and they are produced in April and May. The species is a native of Tauria, or the neighbourhood of Mount Caucasus, whence it was introduced in 1806. It is quite hardy in British gardens.

OTHER SPECIES OF *SYMPHYTUM*, BELONGING TO § 2.*S. ECHINATUM*, Ledeb.

The native country of this species is unknown ; but it is very distinct, as the leaves and stem are covered with rough warts. It was first seen in British gardens about 1824.

S. PEREGRINUM, Ledeb.

Very little is known of this species ; but it is supposed to be a native of Poland, and to have been introduced about 1816.

GENUS IV.

ONOSMA, Lin. THE ONOSMA.

Lin. Syst. TETRANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted. Corolla tubularly-cam- | the bases of the lobes. Nuts four, one-celled, ovate, stony, fixed to
 panulate ; throat naked. Anthers sagittate, connected together by | the bottom of the calyx, imperforated at the base. (*G. Don.*)

DESCRIPTION, &c.—Most of the species are small suffruticose plants, covered with a white down, and having crowded linear leaves, and large yellow flowers, which are usually secund, and drooping. The name of *Onosma* is taken from two Greek words, signifying agreeable to an ass.

§ 1.—*Hairs or bristles stellate, rising from tubercles.*1.—*ONOSMA TAURICUM*, Marsch. THE GOLDEN-FLOWERED ONOSMA.ENGRAVINGS.—Bot. Mag., t. 889 ; and our *fig. 6*, in Pl. 77.

SPECIFIC CHARACTER.—Stem simple, except at the base. Leaves

linear-lanceolate, and covered on the under side with a whitish down.

DESCRIPTION, &c.—This is a very handsome species, from the large size of its dark yellow flowers. It is a dwarf plant, and grows in tufts, many stems rising from the same root. It is a native of Mount Caucasus, and was introduced in 1801.

OTHER SPECIES OF ONOSMA, BELONGING TO § 1.

O. GIGANTEUM, Lam.

This species is a native of the Levant, whence it was introduced in 1818. It grows three or four feet high, and has pale yellow flowers, each of which has a dark purple style.

O. RIGIDUM, Ledeb.

This species is a native of Tauria, where it grows from six inches to a foot high. The root is of a dark brown, and quite woody; and the flowers, which are of a pale yellow, stand erect. It is a dwarf plant, and it was introduced in 1826.

O. STELLULATUM, Lehm.

This is by some supposed to be a variety of *O. Taurica*, to which it is very nearly allied, but the flowers are smaller, and of a paler yellow. It is a native of Hungary, and was introduced in 1816.

§ 2.—*Hairs or bristles solitary.*

2.—ONOSMA SIMPLICISSIMA, Willd. THE SIBERIAN SIMPLE ONOSMA.

SYNONYMS.—*O. Sibirica, Lamé*; *O. simplex, Gart.*
 ENGRAVING.—*Bot. Mag.* t. 2248.

SPECIFIC CHARACTER.—Stem simple. Flowers aggregate. Leaves linear, acute, hairy. Filaments of the anthers very short.

DESCRIPTION, &c.—This is a very singular-looking plant, only one flowering stem rising from each root; though there are several small abortive shoots growing at its base. It is quite hardy, and flowers in May and June. It is a native of Siberia, whence it was introduced in 1768.

OTHER SPECIES OF ONOSMA BELONGING TO § 2.

O. ECHIOIDES, Lin.

The stem of this species is much branched, and the root is brownish-red and woody. The flowers are of a pale-yellow, and the nuts quite smooth and shining. The plant is a native of Tauria, and was introduced in 1683.

O. ECHINATUM, Desf.

This is a biennial, a native of Barbary, which does not appear to have been introduced. The leaves and stems are covered with white pungent hairs, and the nuts are tubercularly wrinkled. *O. setosum, Ledeb.* appears to be nearly allied to this species.

O. TINCTORIUM, Marsch.

This species is remarkable for its root being used in dyeing violet colour. The flower is yellow, and the nuts are smooth, shining, and marbled. There is a variety, the flowers of which are lilac; but in both the species and the variety, the flowers are white when they first expand, and do not assume their peculiar colours till they become matured. It is a native of Tauria, and was introduced in 1826.

O. ORIENTALE, Lin.

A native of the Levant, with handsome yellow flowers and purple styles. Introduced 1752.

There are several other species, most of which are dwarf plants, very suitable for growing on rock-work; but, as most of them are natives of very dry sandy situations, they seldom live long when planted in a rich

border in a garden, as they are very apt to rot. On this account, when they are not grown on rock-work, they do best in pots, nearly half-filled with corks, and the remainder with gravel or sand. They are all propagated by cuttings, which should be struck under a hand-glass.

GENUS V.

ONOSMODIUM, *Michx.* THE ONOSMODIUM.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted; corolla tubularly campanulate, with a naked throat; limb ventricose; segments conniving; stamens inclosed; anthers sagittate, distinct; style exerted. Nuts four, one-celled, turgid, shining, fixed to the bottom of the calyx, imperforated at the base. (*G. Don.*)

DESCRIPTION, &c.—The species composing this genus are all hardy herbaceous plants, with terminal drooping racemes of white or cream-coloured flowers, and they are all natives of North America or Mexico. The name of *Onosmodium* signifies “like *Onosma*.”

1.—ONOSMODIUM HISPIDUM, *Michx.* THE HISPID ONOSMODIUM.

SYNONYMES.—*Lithospermum virginicum*, *Lin.*; *Purshia hispida*, *Lehm.* dotted with papillæ; racemes short, revolute; segments of the corolla subulate, acute.

SPECIFIC CHARACTER.—Hispid; leaves obovate-lanceolate, acute,

DESCRIPTION, &c.—The flowers of this plant are of a yellowish-white, and closely resemble those of *Symphytum*. The species is a native of North America, from New York to Carolina, always growing on dry limestone rocks. It was introduced in 1759, and flowers from June till August. It generally grows about a foot high; but in chalky soils it will attain the height of two feet, and sometimes more. It is quite hardy in British gardens.

2.—ONOSMODIUM MOLLE, *Michx.* THE SOFT ONOSMODIUM.

SYNONYMES.—*Lithospermum Carolinianum*, *Lam.*; *L. molle*, *Muhl.*; *Purshia mollis*, *Lehm.* leaves approximate, oblong-ovate, acutish, slightly three-nerved; racemes short, terminal, nodding; segments of the calyx acute, but those of the corolla suboval and obtuse.

SPECIFIC CHARACTER.—Plant clothed entirely with soft white hairs;

DESCRIPTION, &c.—This plant is smaller, and of a more delicate habit of growth, than the preceding species, from which it is easily distinguished by its being entirely covered with soft white hairs. The racemes of flowers are short and nodding, and the flowers themselves are white. The plant was introduced from North America in 1812.

OTHER SPECIES OF ONOSMODIUM.

There are only two other species of this genus, neither of which has been introduced. One of these, *O. scabrum*, a native of the Arkansas, is said to have flowers which look like little shells when dried.

GENUS VI. PULMONARIA, *Tourn.* THE LUNG-WORT.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft, prismatically pentagonal, but campanulate while in fruit. Corolla funnel-shaped; with a perivious pilose throat. Nuts four, one-celled, turbinate, fixed to the bottom of the calyx, imperforated at the base. (*G. Don.*)

DESCRIPTION, &c.—All the species belonging to this genus are herbaceous plants, with spotted leaves, and terminal, corymbose racemes of flowers. All the species have the peculiarity of changing colour decidedly without fading, and, on this account, the flowers generally appear of two bright colours, such as pink and blue; about half the flowers being of one colour, and the rest of the other colour. The names of Pulmonaria and Lung-wort, which signify the same thing, are said by some botanists to allude to the mucilaginous qualities of the leaves, which render them, when boiled, useful in coughs and other affections of the lungs.

1.—PULMONARIA MOLLIS, *Horn.* THE SOFT LUNG-WORT.

SYNONYMES.—*P. angustifolia*, *Bess.*; *P. officinalis*, *Patr.*; *P. officinalis* var., *Lin.*

ENGRAVINGS.—*Bot. Mag.*, t. 2422; and our *fig. 2*, in Pl. 78.

SPECIFIC CHARACTER.—Leaves ovate; lanceolate, acuminate, pubescently tomentose, decurrent; radical leaves petiolate. Tube of the calyx nearly as long as the corolla.

DESCRIPTION, &c.—This plant is very nearly allied to the British species called *P. angustifolia*, and both differ but slightly from the common British Lung-wort. The present species has erect stems, and the leaves covered with soft long hairs. The plant is not very ornamental, as the flowers, which are partly of a dull pink, and partly purple, are more than half hidden by the calyx. The species is a native of the Pyrenees, whence it was introduced in 1805

2.—PULMONARIA PANICULATA, *Ait.* THE BLUE-FLOWERED PANICLED LUNG-WORT.

SYNONYMES.—*Lithospermum paniculatum*, *Spreng.*; *Mertensia paniculata*, *G. Don.*

ENGRAVINGS.—*Bot. Reg.*, t. 146; *Bot. Mag.*, t. 2680; and our *figs. 1* and *3*, in Pl. 78.

SPECIFIC CHARACTER.—Stem leaves ovate-oblong, acuminate, hairy. Calyx very short; limb of the corolla campanulate; panicles of flowers nodding.

DESCRIPTION, &c.—This plant varies so much in the size of the panicles, and in the size and colour of the flowers, as to appear almost like two distinct species, as will be seen by comparing figures 1 and 3, in Plate 78. The shape of the flowers is, however, the same in both; and, upon examination, it will be found very distinct from that of the flowers of every other kind of Pulmonaria; the tube being very short and almost globular, and the limb expanding into a sort of bell-shape. It is a very pretty species, from the brilliant colours of its flowers, which are either of a bright ultramarine blue, or of a pale pink. The species is quite hardy, and is a native of Hudson's Bay, whence it was introduced by Dr. Solander in 1778. It is quite common in gardens, and it requires no particular care in its culture. It is propagated by dividing its roots.

3.—PULMONARIA DAHURICA, *Fisch.* THE DAURIAN LUNG-WORT.

SYNONYMES.—*P. davurica*, *Sims.*; *P. amena*, *Stev.*; *P. gracilis*, *Willd.*; *Lithospermum Dahuricum*, *Lehm.*; *Mertensia Dahurica*, *G. Don.*

ENGRAVING.—*Bot. Mag.*, t. 1743.

SPECIFIC CHARACTER.—Radical leaves ovate, petiolate, rough. Stem leaves linear-lanceolate, very smooth. Limb of the corolla cup-shaped tube long; style exserted.

DESCRIPTION, &c.—This species bears a general resemblance to the last; but there are several important points of difference. The principal of these, are,—the length of the style, which projects beyond the corolla; the

length of the tube with the cup-shape of the limb, and the narrowness of the stem-leaves. The species is a native of the neighbourhood of Mount Caucasus, and was introduced in 1812. It is quite hardy in British gardens, where it flowers in May.

OTHER SPECIES OF PULMONARIA.

These are not very numerous, and most of them differ but little from the kinds already described.

GENUS VII.

LITHOSPERMUM, *Tourn.* THE GROMWELL.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted. Corolla funnel-shaped, with a naked, pervious throat. Anthers oblong, inclosed. Nuts four, one-celled, fixed to the bottom of the calyx; imperforated at the base. (*G. Don.*)

DESCRIPTION, &c.—These are rough-looking plants, having generally narrow leaves, and terminal flowers. The name is derived from *lithos*, a stone, and *sperma*, a seed, in reference to the hard seeds, or nuts, as they are called by botanists, of the plants. All the species are herbaceous, or suffruticose plants. The genus is divided into two sections, viz., those which have smooth nuts, and those which have wrinkled ones. They are mostly natives of Europe.

1.—LITHOSPERMUM ORIENTALE, *Lin.* THE EASTERN, OR YELLOW GROMWELL, OR BUGLOSS.

SYNONYMES.—*Anchusa orientale*, *Bur.*; *Buglossum orientale*, *Tourn.*; *Asperugo divaricatus*, *Murr.*

ENGRAVINGS.—*Bot. Mag.*, t. 515; and our *fig. 4*, in Pl. 78.

SPECIFIC CHARACTER.—Stems ascending, branched. Leaves oblong-lanceolate, hairy. Bracts cordate; stem clasping.

DESCRIPTION, &c.—This is a very hardy plant, which is valuable on that account and for its flowers, which appear early in May, continuing a long time in succession. It is propagated by seeds, cuttings, and division of the roots; and it will grow in almost any soil and situation. It is a native of the Levant, and it was introduced in 1713.

2.—LITHOSPERMUM TINCTORIUM, *Lin.* THE DYER'S GROMWELL, OR BUGLOSS.

SYNONYMES.—*L. tuberculata*, *Forsk.*; *L. procumbens*, *Sauv.*; *Anchusa tinctoria*, *Horn.*; *A. punicea*, *Bauh.*; *A. mouspelica*, *Regn.*

ENGRAVING.—*Bot. Rep.* t. 576.

SPECIFIC CHARACTER.—Stems procumbent. Leaves lanceolate, obtuse, hairy. Calyx hairy, shorter than the tube of the corolla. Nuts wrinkled.

DESCRIPTION, &c.—This species differs widely from the last. The flowers are blue, with a white throat. The root is woody, twisted, and divided into many branches; it used formerly to be used in dyeing violet. The species is a native of the South of Europe, and it was introduced in 1596. It grows best in a dry, poor soil, and is very suitable for rock-work. It flowers from June till August.

OTHER SPECIES OF LITHOSPERMUM.

These are mostly annuals, or suffruticose plants. There are, however, two British species which are perennials; one with purplish-blue flowers, and the other, with a pale yellow.



1. *Pulmonaria parviflora* 2. *Pulmonaria mollis* 3. *Pulmonaria parviflora* var. 4. *Pulmonaria parviflora*

GENUS VIII.

BATSCHIA, Michx. THE PUCCOON.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx 5-cloft. Corolla salver-shaped, with the tube longer than the calyx, and furnished with a ring of hairs inside | at the base, though the mouth is naked; the anthers are inclosed. The nuts are smooth and shining, and imperforated at the base.

DESCRIPTION, &c.—The plants included in this genus are all natives of North America, and have yellow or copper-coloured flowers. They were included in the genus *Lithospermum* by the older botanists, but were separated by Michaux, on account of the fringe of hair found inside the lower part of the tube of the flower. To the common observer, however, they appear to belong to *Lithospermum*. Michaux named his new genus *Batschia* in honour of Professor Batsch, a German botanist.

1.—BATSCHIA LONGIFLORA, Pursh. THE LONG-FLOWERED PUCCOON.

SYNONYMES.—*Lithospermum incisum*, Lehm.; *L. longiflorum*, hairs. Leaves approximate, linear, with revolute margins. Corolla *Spreng.*; *L. angustifolium*, Muhl. with an elongated tube; segments of the calyx linear.

SPECIFIC CHARACTER.—Plant erect, and clothed with long, silky

DESCRIPTION, &c.—This species has its flowers disposed in close tufts, or bundles, something like those of the Sweet-william; but the flowers are looser from the length of the tube, and they are of a delicate primrose yellow. The species is a native of the banks of the Mississippi, whence it was introduced in 1812. It is a dwarf plant, and flowers in July.

2.—BATSCHIA CAROLINIENSIS, Pers. THE CAROLINA PUCCOON.

SYNONYMES.—*B. Gmelina*, Michx.; *Lithospermum hirtum*, Lehm.; SPECIFIC CHARACTER.—Plant hairy. Stems erect, simple. Leaves *Anchusa hirta*, Muhl.; *Anonymos Carolinensis*, Walt. linear, lanceolate. Tube of the corolla shorter than the calyx.

DESCRIPTION, &c.—This is a native of Lower Carolina, where it is found in dry open situations, exposed to the sun. The flowers are yellow, and very hairy on the outside. The plant was introduced in 1812.

3.—BATSCHIA CANESCENS, Michx. THE HOARY PUCCOON.

SYNONYMES.—*Anchusa canescens*, Muhl.; *A. virginiana*, Lin.; SPECIFIC CHARACTER.—Plant clothed with white tomentum. Stem *A. lutea*, Gron.; *Lithospermum canescens*, Lehm. erect. Leaves oblong, obtuse, emarginate at the apex. Calyx very short.

DESCRIPTION, &c.—The flowers of this species are copper-coloured, and the nuts are hard, white, and shining, looking like little pebbles. The root is fleshy, and is covered with a red substance which is called Puccoon by the Indians, and is used by them for painting their bodies red. The stem grows about two feet high, and generally bears two racemes of flowers at the top. The species is a native of Virginia and Carolina, where it always grows on dry sandy hills, fully exposed to the sun. It was introduced in 1826, and it flowers in June and July.

OTHER SPECIES OF BATSCHIA.

These are very few, and none of them have yet been introduced. One species, *B. decumbens*, which has prostrate stems and pale yellow flowers, would probably be very suitable for rock-work. All the species afford a crimson dye from the root.

GENUS IX.

ECHIUM, *Tourn.* THE VIPER'S BUGLOSS.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx 5-parted; corolla funnel-shaped or campanulate, with the segments of the limb frequently unequal; stamens exserted; style cleft at the top, and hairy at the base. Nuts four, turbinate, imperforated at the base, and fixed to the bottom of the calyx. Flowers in terminal spikes, or panicles. Leaves lanceolate.

DESCRIPTION, &c.—The plants belonging to this genus are of various kinds. Some are greenhouse shrubs, natives of the Canary Islands and the Cape of Good Hope; and the others are annuals and perennials, mostly natives of Europe. All the species are very elegant when in flower; and most of the herbaceous kinds are quite hardy in British gardens. The word *Echium* signifies a Viper, and both that and the English name refer to the supposed use of the plant in curing the bite of a viper.

1.—ECHIUM RUBRUM, *Willd.* THE RED-FLOWERED VIPER'S BUGLOSS.

SYNONYMES.—*E. roscicum*, *Gmel.*; *E. creticum*, *Pall.*; *E. italicum*, *Mor.*

ENGRAVINGS.—*Bot. Mag.*, t. 1826; and our *fig. 1*, in Pl. 79.

SPECIFIC CHARACTER.—Stem erect, hispid, spotted. Leaves linear-lanceolate. Flowers in a terminal spike; segments of the corolla nearly equal.

DESCRIPTION, &c.—This plant has a strong, erect stem, spotted with purple, and covered with small hairs. The leaves are short, very narrow, and also covered with short hairs. The stamens are longer than the corolla, and, the pollen being blue, they form rather a singular contrast to the bright pink of the principal part of the flower. The flowers vary in colour from a pale pink to a dark rose colour; but they never have any shade of blue or purple, which is the more remarkable as the greater number of the species in this genus have purplish flowers. *Echium rubrum* is a hardy perennial, which flowers in May and June, and is increased by dividing the root, or by seeds. It is a native of Hungary, whence it was introduced in 1791. It requires no particular care in its culture, except that it likes an open, airy situation, better than one in the shade.

2.—ECHIUM PYRENAICUM, *Lin.* THE PYRENEAN VIPER'S BUGLOSS.

SYNONYMES.—*E. pyramidale*, *Lap.*; *E. aspernum*, *Lam.*; *E. italicum* var. *Willd.*; *E. levigatum*, *Vitt.*

SPECIFIC CHARACTER.—Stem much branched, spotted, and beset with stiff, spreading hairs. Leaves linear-lanceolate, hispid. Flowers

disposed in conjugate, elongated, terminal spikelets, rather distant from each other; segments of the corolla lanceolate, obtuse, nearly equal; style bifid at the apex. Nuts beaked.

DESCRIPTION, &c.—This species has generally either violet-coloured or white flowers, and a branched stem. The seeds, or, more properly speaking, nuts, are also distinguished by their being drawn out into a point on one side, resembling the beak of a bird. The species is a native of the Pyrenees, whence it was introduced in 1815. It flowers in July and August, and it is increased by dividing the roots, or by seeds.

3.—ECHIUM CRETICUM, *Lin.* THE CRETAN VIPER'S BUGLOSS.

SYNONYMES.—*E. rubrum*, *Mench.*; *E. angustifolium*, *Mill.*

ENGRAVINGS.—*Bot. Mag.*, t. 1934, and our *fig. 3*, in Pl. 79.

SPECIFIC CHARACTER.—Stem diffuse, hispid, branched at the base. Leaves oblong-lanceolate, hispid, narrowed at the base. Stamens inclosed. Calyx, while bearing the fruit, distended and widened.

DESCRIPTION, &c.—This species, though marked in some books as an annual, is, in fact, a biennial, or rather triennial, as, when raised from seed, it scarcely ever flowers till the second year, and will generally last three or four years like the Wallflower. The leaves are large and handsome, and the flowers, which are of a bright



1. *Echium rubrum*. — 2. *Anchusa Italica*. — 3. *Echium Creticum*.

pink when they first open, soon become, in the upper part or limb, of as bright a blue. The species is a native of Crete and the Levant, whence it was introduced in 1683. It is generally propagated by seeds or cuttings.

OTHER SPECIES OF ECHIMUM.

Most of the other biennial and perennial species of *Echium*, excepting those which are natives of Britain, appear to be only varieties of the species above described.

GENUS X.

ANCHUSA, *Lin.* THE BUGLOSS.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft or five-parted. Corolla one-celled, turbinate, fixed to the bottom of the calyx, perforated and funnel-shaped; throat closed by erect obtuse processes. Nuts four, concave at the base. (*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this genus are very nearly allied to those included in the genus *Echium*; but they differ in the nuts being perforated at the base, while in *Echium* they are imperforated—that is, without any opening. There is also some difference in the flowers, and in the general habit of the plants; but this, though very perceptible when the plants are seen growing together, cannot be very easily described. Most of the plants belonging to the genus *Anchusa* are hardy, and natives of Europe; but others are natives of South America, and, of course, are only half-hardy in British gardens. The name *Anchusa* signifies paint for the skin, and alludes to the colouring matter found in the roots of some of the species. Bugloss is derived from two Greek words, signifying an ox's tongue, and it alludes to the roughness of the leaves of most of the plants known by that name.

1.—ANCHUSA ITALICA, *Retz.* THE ITALIAN BUGLOSS.

SYNONYMES.—*A. paniculata*, *Lehm.*; *A. officinalis*, *Gouan.*; *Buglossum italicum*, *Hort.*; *B. officinale*, *Lam.*; *B. elatum*, *Manch.*; *B. angustifolium*, *All.*; *B. amoenum*, *Gertn.*; *Buglossa vulgaris*, *Ger.*

ENGRAVINGS.—*Bot. Reg.*, t. 483; and our *fig. 2*, in *Pl. 79*.

SPECIFIC CHARACTER.—Stem erect, branched; leaves lanceolate undulated; racemes conjugate, divaricate, paniculated, bracteate; tube of the calyx nearly equal to that of the corolla; segments subulate, furnished with a stiff fringe.

DESCRIPTION, &c.—This species is remarkable for the hairs of the calyx, which form a tuft, like that of a camel-hair pencil, at the extremity of each segment. The plant is a hardy biennial, with an erect stem, growing two or three feet high, and divided into numerous branches. The flowers are of a deep blue, but they are rather small in proportion to the leaves. The plant has been found both in the south of Europe and in the island of Madeira; and it was introduced before 1597.

2.—ANCHUSA ANGUSTIFOLIA, *Willd.* THE NARROW-LEAVED BUGLOSS.

SYNONYMES.—*A. leptophylla*, *Ram. et Schult.*; *Buglossum vestre*, *Zanoni*; *B. angustifolium*, *Bauh.*

ENGRAVING.—*Bot. Mag.*, t. 1897.

SPECIFIC CHARACTER.—Leaves oblong-lanceolate, entire; racemes terminal; calyx five-cleft; fruit erect.

DESCRIPTION, &c.—This species is remarkable for its bright purple flowers, and its long narrow leaves. It is a native of the south of Europe, whence it was introduced in 1640; and it flowers from May till October.

3.—*ANCHUSA TINCTORIA*, *Lin.* THE DYER'S BUGLOSS, OR ALKANET-ROOT.

SPECIFIC CHARACTER.—Stems diffuse; root woody, descending, of a dark red colour; leaves oblong, covered with stiff hairs; spikes or racemes terminal, generally conjugate, many-flowered; bractæas

longer than the calyx; processes of the corolla shorter than the stamens.

DESCRIPTION, &c.—The flowers of this species have a dark red tube, which is inflated at the lower part, and a deep blue limb. The species is a native of many parts of the south of Europe; and it is cultivated in many places for its roots, which are used in dyeing, and which impart a fine deep red to oils, wax, and other similar substances. It is hence very useful for making a dye for furniture, and for colouring lip-salve, &c. It is a dwarf plant, rarely growing above six inches high, and it flowers from June till October. It was introduced before 1596.

4.—*ANCHUSA OCHROLEUCA*, *Bieb.* THE CREAM-COLOURED ALKANET.

SYNONYM.—Buglossum orientale, *Tourn.*

ENGRAVING.—Bot. Mag., t. 1608.

SPECIFIC CHARACTER.—Flowers equal, calyx five-cleft, campanulate, fruit-bearing, naked. Leaves linear-lanceolate, slightly undulated, hispid; bracts of the calyx very short.

DESCRIPTION, &c.—This species is remarkable for having white, or rather cream-coloured, flowers. It is found wild near Mount Caucasus, in open fields. It is a biennial, and quite hardy. It was introduced in 1810.

OTHER SPECIES OF *ANCHUSA*.*A. HISPIDA*, *Forsk.*

This is a dwarf plant, a native of Egypt; introduced in 1817. The flowers are very small, and the whole plant is covered with hairs.

A. BARRELIERI, *Dec.*

This plant is very much like a species of Forget-me-not. The corolla has a white tube, a blue limb, with a yellow throat. The stem grows one or two feet high. The species is a native of the south of Europe, where it is generally found growing by the road-side, or among rubbish; and it was introduced in 1820.

A. UNDULATA, *Willd.*; Bot. Mag., t. 2119.

This species is a hardy perennial, a native of Spain and Portugal, which was introduced in 1756. It is remarkable for its undulated leaves, and small dark-purple flowers.

A. CAPENSIS, *Thumb.*; Bot. Mag., t. 1822; and Bot. Rep., t. 336.

This very remarkable plant differs from the other species of *Anchusa* in having an ornamental calyx; the whole mass of flowers presenting a singular assemblage of colours, which are blended with each other so as to present a similar appearance to that of shot-silk. The species is a native of the Cape of Good Hope, whence it was introduced in the year 1800. It is a biennial, and requires protection during winter.

There are some other species of perennial plants belonging to this genus, but they are rarely seen in British gardens.



1. *Mandragora autumnalis*. 2. *Solanum elaeagnifolium*. 3. *Physalis viscosa*.

CHAPTER XXXVIII.

SOLANACEÆ.

CHARACTER OF THE ORDER.—Calyx usually five-cleft below, and remaining on the fruit. Corolla monopetalous, and beneath the pistil; limb generally five-cleft; plicate in aestivation. Stamens epipetalous; equal in number to the segments of the corolla. Embryo much curved. Fruit baccate. Placentas usually adnate to the dissepiment. Seeds numerous.

DESCRIPTION, &c.—The plants belonging to this order are easily known by their flowers and their habit of growth. The flowers are generally regular, with the limb of the corolla divided into five equal segments, each of which is folded down the middle, when the flower is in the bud; this fold is very conspicuous in some of the kinds of tobacco, and in the White Petunia. The stamens are equal in size, and generally form a projecting mass in the centre of the flower, as in the flowers of the common potato. Nearly all the plants belonging to this order have showy flowers, but a coarse foliage, which has always a disagreeable smell; and nearly all are more or less poisonous, though they may be deprived of their deleterious qualities by being cooked. They are chiefly natives of North and South America.

GENUS I.

SOLANUM, *Tourn.* THE NIGHTSHADE.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx generally five-cleft. Corolla rotate or campanulate, generally five-cleft. Anthers connivent, opening by pores at the apex. Berry roundish, usually two-celled.

DESCRIPTION, &c.—The plants belonging to this genus are of various kinds; some are herbaceous, some shrubs; some are prickly, and others perfectly smooth; and the leaves and flowers vary considerably in form, colour, and texture. There is, however, always a strong family likeness in the flowers, which renders it easy to recognise any species of this genus at first sight. The derivation of the word *Solanum* is not exactly known; some persons say it is from *sol*, the sun; others, from *solor*, to comfort, from the narcotic qualities of some of the species; and others, from *sularium*, from *sus*, swine, potatoes being formerly only used to feed swine. The word was used by Pliny, but Tournefort was the first systematic botanist who adopted it.

1.—SOLANUM ETUBEROSUM, *Lindl.* THE TUBERLESS NIGHTSHADE.

ENGRAVINGS.—Bot. Reg., t. 1712; and our *fig. 2*, in Pl. 80.

SPECIFIC CHARACTER.—Rhizoma fleshy, but without tubers; leaflets unequal, complicated, undulated, approximate, alternate ones very small. Pedicels articulated. Calyx and corolla five-angled, glabrous.

DESCRIPTION, &c.—This plant bears considerable resemblance to the common potato, both in its habit of growth and its flowers; but its flowers are larger, and it has no tubers. The flower-stalks are also smooth and shining, instead of having “the rough dull appearance” of those of the potato. The plant is a native of Chili, whence it was introduced in 1833, and it will grow in any common garden soil. It flowers from July to October, and is propagated by dividing the roots, or rather, the underground stems. *S. Commersoni* introduced from Monte Video about 1822, is supposed to be a variety of this species, or, at any rate, nearly allied to it. It is now lost in British gardens. *S. Commersoni*, and a white-flowered variety of the common potato, are both figured in the Fifth vol. of the Hort. Trans.; the latter is very ornamental.

2.—*SOLANUM LACINIATUM*, *Ait.* THE CUT-LEAVED NIGHTSHADE.

SYNONYMS.—*S. pinnatifidum*, *Lam.*; *S. aviculare*, *Pers.*; *S. reclinatum*, *Hort.*

ENGRAVING.—*Bot. Mag.*, t. 349.

SPECIFIC CHARACTER.—Quite smooth. Leaves pinnatifid, segments linear-lanceolate. Berry oval.

DESCRIPTION, &c.—This is a very handsome species, and one which would scarcely be known for a *Solanum*, both from the anthers in the flowers being separated, and from the leaves, which are pinnatifid. The berries are of the shape of small plums, and their pulp, which is sweet and resembles that of a fig, is eatable. The species is a native of New Zealand, and was introduced in 1772. When it was first brought to England it was kept in a stove; it was afterwards placed in a greenhouse; and it was finally found to be quite hardy, and even to ripen its fruit thoroughly in the open air. It flowers nearly all the summer, and it is easily propagated either by cuttings or seeds.

OTHER SPECIES OF *SOLANUM*.*S. QUERCIFOLIUM*, *Lin.*

The leaves resemble those of the oak; and the flowers are violet-coloured, with two green marks at the base of each segment of the corolla. A native of Peru; introduced before 1787.

S. RADICANS, *Lin. fil.*

A native of Peru; introduced in 1771, with small violet-coloured flowers, and red berries about the size of a pea.

S. ZUCCAGINANUM, *Dun.*

A very handsome species, sometimes called the warted *Solanum*, much cultivated in the gardens of Florence and Montpellier. The plant is of a bright green, but it is covered all over with minute crystalline warts. The flowers are white, and the berries cherry-shaped, and of a bright red when ripe. It was introduced in 1823.

GENUS II.

PHYSALIS, *Lin.* THE WINTER CHERRY.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-toothed; corolla campanulately rotate, five-lobed, lobes plicate; anthers connivent, opening length-ways; stigma capitate; berry two-celled, many-seeded, covered entirely with the inflated calyx, which remains on till the seeds are ripe.

DESCRIPTION, &c.—All the species are remarkable for the inflated bladder-like calyx, which incloses and entirely conceals the fruit, and this gives rise to the botanic name of the genus, the word *Physa* signifying a bladder. A very beautiful preparation may be made by macerating the inflated calyx of the common winter cherry, so as to leave only the network of veins remaining; and this has a striking effect, as the bright red fruit shines through the network like a large coral or cornelian bead. A preparation of this kind may be easily made by soaking the calyx inclosing the fruit for about six weeks in water, without changing the water, and then washing the decayed pulp away by shaking the calyx gently in clear water. All that is necessary is patience to separate the pulpy matter carefully from the fibrous part, so as to leave the latter quite clear and yet unbroken. The fruit is slightly acid and pleasant to eat, not possessing any unwholesome properties, even though uncooked, and in this respect being quite different from that of the other genera of the order. The species are mostly natives of America.

1.—*PHYSALIS VISCOSA*, *Lin.* THE CLAMMY WINTER CHERRY.

SYNONYMES.—*P. pennsylvanica*, *Pursh.*; *Alkekengi Bonariensis*,
Dill.

ENGRAVINGS.—*Bot. Mag.*, t. 2625; and our *fig.* 3, Pl. 80.

SPECIFIC CHARACTER.—Leaves twin, repand, obtuse, subtomentous.
Stem herbaceous, panicled in the upper part.

DESCRIPTION, &c.—This plant has a creeping under-ground stem, which sends up suckers all round the plant. The stem branches in an angular manner, and the branches are square with sharp angles. The leaves, which are generally produced in pairs, are commonly waved at the edges, and covered with a soft down on the under side. The flowers are solitary, and not remarkable for their beauty; the fruit is slightly acid and good to eat. The species is a native of Brazil, and also of the whole of North America, whence it was introduced in 1699. It is of the easiest culture, and indeed, when once planted in any common garden soil, it spreads so fast, by means of its numerous suckers, as to be quite troublesome. The berries of the species are orange, but there is a variety the berries of which are not larger than those of a pea, and of a bright red.

2.—*PHYSALIS ALKEKENGI*, *Lin.* THE ALKEKENGI, OR COMMON WINTER CHERRY.

SYNONYMES.—*P. halicacabum*, *Scop.*; *Alkekengi officinarum*,
Tourn.

SPECIFIC CHARACTER.—The whole plant covered with a soft down,

consisting of simple hairs. Root creeping; stem almost simple; leaves ovate, deltoid, acuminate, repand; flowers spotless; calyx ovate, coloured.

DESCRIPTION, &c.—The flowers of this species are rather handsome, and the calyx inclosing the fruit is of a reddish yellow, with rather strongly marked ribs. The fruit itself is of a brilliant scarlet, and pleasantly acid, though after it has been eaten some time it leaves a bitter taste in the mouth. It was formerly used in medicine, and is still considered wholesome, particularly in dropsical complaints. In some parts of Germany it is used as a substitute for gooseberries in preserves or tarts. It is found wild in many parts of Europe, always growing on the exposed part of hills; and it is said to have been found also in Japan. It was known to the ancients, and is spoken of by Dioscorides. It was introduced into England before 1548, as it is mentioned by Dr. Turner, who wrote in that year, as good in medicine.

3.—*PHYSALIS PERUVIANA*, *Nees.* THE PERUVIAN WINTER CHERRY, OR CAPE GOOSEBERRY.

SYNONYMES.—*P. esculenta*, *Willd.*; *P. tomentosa*, *Medic.*; *P. pubescens*, *Lin.*; *P. tuberosa*, *Zucc.*; *P. latifolia*, *Roem. et Schult.*;
P. Barbadensis, *Lam.*; *P. edulis*, *Sims.*

ENGRAVING.—*Bot. Mag.*, t. 1068.

SPECIFIC CHARACTER.—Plant covered with pubescent hairs. Stem erect, branched a little. Leaves cordate, acuminate. Calyx ovate.

DESCRIPTION, &c.—This is a very handsome species. The leaves are covered with a soft grayish down; the flowers are yellow, and are stained with a rich dark-brown spot at the base; and its calyx, which is very large, is strongly marked with brown ribs. The berry is yellow, and it is not only agreeable to the taste, but it has a very agreeable fragrance. The berries are considered very wholesome, and are frequently used even in England as a substitute for gooseberries in tarts; the plants being cultivated, occasionally, solely for their fruit. In other places they are cultivated in gardens as ornamental plants. The species is a native of South America the East Indies, New Holland, and Madeira; it was introduced in 1772, and it requires a slight protection during winter. All the other species of Winter Cherry common in British gardens are annuals.

GENUS III.

MANDRAGORA, *Tourn.* THE MANDRAKE.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER. — Calyx turbinate, five-angled, five-cleft. Corolla campanulate, five-cleft. Stamens five. Filaments dilated at the base, and connivent; but filliform and divaricate at the apex. Ovary furnished with a circular gland round the base, which is drawn out into two horns. Stigma capitate having the receptacles rather prominent inside. Seeds many, reniform, disposed in a simple series. (*G. Don*).

DESCRIPTION, &c.—The Mandrake was celebrated in ancient times as having been employed by witches in their incantations, and many wild tales were told of it, and once firmly believed.

The fatal Mandrake is, I ween,
As strange a plant as e'er was seen:
Although it springs from mother earth,
Wild and unholy was its birth.

It grows from seed no eye shall see—
The fat that drops from the gallows-tree,
And screams ring from its quivering leaves,
When human hand its blossoms reeves.

The fictions related of this plant appear to have arisen from the shape of the roots, which bear some resemblance to the human form; and the bad character it has so long borne probably took its origin from its being poisonous, and one of those poisons which are difficult to detect on a *post-mortem* examination of the body. The name of Mandragora is said to be derived from two Greek words, signifying, cruel to oxen; and the English name of Mandrake is either derived from the Greek name, or alludes to the supposed half-human nature of the plant. The appearance of the Mandrake is rather singular; the leaves are very large, and broad, rising from the root; the plant has no proper stem, and the flower-stalks are always shorter than the leaves; the flowers are produced singly, with distinct segments to the corolla, and stamens which are widely apart, instead of having their anthers close together, as in the genus *Solanum*. The roots are large and fleshy, and they are usually forked, so as to bear some resemblance to human legs.

1.—MANDRAGORA OFFICINARUM, *Lin.* THE COMMON MANDRAKE.

SYNONYMES.—*M. officinalis*, *Mill.*; *M. vernalis*, *Spring.*; *M. acaulis*, *Gertn.*; *Atropa Mandragora*, *Ball.*

SPECIFIC CHARACTER.—Leaves oblong, lanceolate and ovate, acute, a foot long, undulated, entire; at first erect, then spreading. Root and flowers white. Segments of the calyx lanceolate, linear, acuminate; segments of the corolla acute. (*G. Don.*)

DESCRIPTION, &c.—This is the plant that is fabled to grow under a gallows, from the decay of dead bodies hanging there; and that is said to utter shrieks and groans when its leaves and flowers are gathered, or when it is pulled up. Witches were also said to hold a plant of this mandrake in their hands while muttering their incantations. It was said to be so poisonous as to kill those who gathered it: and in the old herbals it is gravely advised to tie a dog to any plant of it that is to be pulled up, to avoid the danger of touching it. The flower is not remarkable for its beauty. It is of a pale blue. The fruit is as large as a nutmeg, and of a yellowish green when ripe. The root is very fleshy, usually white, and frequently from three to four feet long. Its only medicinal qualities are those of an opiate, and if taken in large quantities it generally proves fatal.

2.—MANDRAGORA PRÆCOX, *Swt.* THE EARLY-FLOWERING MANDRAKE.

SYNONYMES.—*Atropa Mandragora*, *B. Lam.*; *A. M. femina*, *Bull.*; *M. officinalis*, *B. Dec*

ENGRAVING.—*Swt. Brit. Flow. Gard.*, t. 198.

SPECIFIC CHARACTER.—Leaves lanceolate, oblong, obtuse, undulated,

bullately wrinkled, villously pubescent, rising at the same time as the flowers; segments of the calyx lanceolate, acute, keeled; segments of the corolla reflexed, spreading.

DESCRIPTION, &c.—This is a very singular little plant, the root is very large and fleshy, dividing into two portions a little below the ground. The leaves rise in a mass directly from the root, forming a sort of cup, in



1. *Verbascum formosum*.—2. *Verbascum Phoeniceum*.—3. *Verbascum Eupcreum*.
4. *Verbascum publanata*.—5. *Raymondia Myconi*

which is placed a tuft or bundle of flowers, which grow with the leaves, and expand about the time the latter have attained their full growth. The flowers are of a yellowish-brown tinged with blue, and they are covered with a dense wool. The species is a native of Switzerland, whence it was introduced in 1819. It flowers early in March, and only grows about six inches high. The plants are quite hardy, but they require some care, as the roots are very liable to rot in winter. The species is generally propagated by seeds, which ripen in abundance.

3.—MANDRAGORA AUTUMNALIS, Bertol. THE AUTUMN-FLOWERING MANDRAKE.

SYNONYME.—*Atropa mandragora*, Sib. et Smith.

ENGRAVINGS.—Sweet's Brit. Flow. Gard., 2d ser., t. 325; and our fig. 1, in Pl. 80.

SPECIFIC CHARACTER.—LEAVES oblong, very hairy; calyx covered with dense woolly hairs; segments lanceolate, acuminate; segments of the corolla elliptic, obtuse; berry oblong, mucronulate.

DESCRIPTION, &c.—The root of this species is long and thick, forked, and generally of an ash colour. The leaves are very large, of a dark green, very much wrinkled, and furnished with numerous warty bristles; they are also of a thick substance, and undulated at the margins. The flowers are of a dark violet; they are large, and are produced one on each stalk; the flower-stalks being of a bright pink, and growing four or five together. In the centre of each flower is a tuft of white, woolly hairs, which entirely fills up the throat of the corolla. The berry is oblong, and of a bright orange. The species is a native of the south of Europe, whence it was introduced before 1548. Like all the other species, it thrives best in a rich deep soil, and it can only be increased by seeds, which hang on all the winter, and do not ripen till the spring. This species is supposed to be the Mandrake mentioned in the Scriptures.

GENUS IV.

VERBASCUM, Lin. THE MULLEIN.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted; corolla rotate or funnel-shaped; stamens five, all bearing anthers, and usually bearded; the anthers lunate, that is, shaped like a half-moon; capsule with two valves, the valves bending in.

DESCRIPTION, &c.—All the species of *Verbascum* are strong, vigorous-growing plants, with broad, thick, woolly leaves, which are largest in size near the root. The flowers are disposed in long terminal racemes, and they are extremely showy. The whole plant, except the flowers, is generally covered with a kind of wool, which makes the leaves feel soft and thick to the touch, and hence one of the popular names of the British species is the flannel plant. The name of *Verbascum* is said to have been originally *Barbascum*, in allusion to the bearded filaments of the stamens. There are numerous species of *Verbascum*, but only a few of the most ornamental are common in British gardens. Most of the species are natives of Europe.

1.—VERBASCUM PHŒNICEUM, Lin. THE PURPLE VERBASCUM.

SYNONYMS.—*Blattaria perennis*, Moris.; *B. purpurea*, Bauh.

ENGRAVINGS.—Bot. Mag., t. 885; and our fig. 2, in Pl. 81.

SPECIFIC CHARACTER.—LEAVES ovate, pubescent beneath; stem

nearly naked; raceme terminal, elongated; pedicels of the flowers solitary, spreading, much longer than the bractes.

DESCRIPTION, &c.—This is a well-known and very handsome plant, which is quite hardy and continues in flower a long time; the flowers in the upper part of the raceme opening gradually as those of the lower part

decay. No plant can require less care in its culture, though its stems are very apt to grow so long and weak as to require being tied to a stick to keep them erect. The species is a native of the south and east of Europe, whence it was introduced in 1796.

2.—*VERBASCUM CUPREUM*, *Sims*. THE COPPER-COLOURED MULLEIN.

ENGRAVINGS.—*Bot. Mag.*, t. 1226; and our *fig.* 3, in Pl. 81.

SPECIFIC CHARACTER.—Stem simple; leaves cordate-ovate, rugged, crenate, woolly below; peduncles with one bract, solitary.

DESCRIPTION, &c.—This species is a hardy biennial which flowers in July and August, and only requires the ordinary culture of plants of its kind. It is supposed to be a hybrid between *V. phoeniceum* and *V. ovalifolium*; and it is remarkable, that when grown in the house, its flowers lose their copper colour, and become of a pale yellow, with a dark centre. It appears to have been raised about 1798. It grows from two to four feet high, and flowers from May till August.

3.—*VERBASCUM OVALIFOLIUM*, *Donn*. THE OVAL-LEAVED MULLEIN.

ENGRAVING.—*Bot. Mag.*, t. 1037.

SPECIFIC CHARACTER.—Stem erect, simple. Leaves oval, sessile; dentately crenate; smooth on the upper surface. Flowers spicate.

DESCRIPTION, &c.—This is a very handsome species, with large golden-yellow flowers, which are disposed in a crowded spike. The stamens are of a bright orange, and both the filaments and the moon-shaped anthers are bearded with a deep fringe. This species also differs from the preceding one in having three bracts to each flower instead of one. It is a native of Mount Caucasus, and was introduced in 1804. Like all the other species it is only propagated by seeds.

4.—*VERBASCUM FORMOSUM*, *Fisch*. THE HANDSOME VERBASCUM.

SYNONYMS.—*V. spectabile*, *Lenk.*; *Fischer's Mullein*.

ENGRAVINGS.—*Bot. Reg.*, t. 558; and our *fig.* 1, in Plate 81.

SPECIFIC CHARACTER.—Stem branching. Leaves woolly and white

below, but green and naked above; usually cordate, acuminate. Spike lax, tomentose. The two lower stamens bent down, and widely apart.

DESCRIPTION, &c.—This is a very handsome species, from the large size and brilliant colours of the flowers. It grows from two to four feet high, and flowers in July and August. It is a native of Caucasus, whence it was introduced in 1818.

OTHER SPECIES OF *VERBASCUM*.

These are numerous, but they are seldom seen in British gardens.

GENUS V.

CELSIA, *Lin*. THE *CELSIA*.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

GENERIC CHARACTER.—Calyx five-parted. Corolla rotate, five-lobed; stamens four, two much longer than the others, all bearded; anthers covered with a short, dense wool.

DESCRIPTION, &c.—All the plants belonging to this genus are herbaceous. The flowers are disposed in loose, terminal racemes, and are generally showy. There are very few species, and most of them require a slight protection during winter.

1.—*CELSIA SUBLANATA*, Jacq. THE WOOLLY CELSIA.

ENGRAVINGS.—Bot. Reg., t. 438; and our fig. 4, in Plate 81.

SPECIFIC CHARACTER.—The whole plant is covered with a thick, cottony wool. Leaves oval-oblong, obtuse, crenate, wrinkled, and

sometimes winged with one or two pairs of very small leaflets, which are distant from the main one. Stamens hairy, and bearded at the base.

DESCRIPTION, &c.—The flowers of this species of *Celsia* bear considerable resemblance to those of some kinds of *Verbascum*, but they are easily distinguished by two of the stamens being longer than the other two, and by the anthers not being crescent-shaped. The present plant grows about two feet high, and is quite hardy. The flowers are fragrant. The native country of this species is unknown, but it is supposed to have been introduced about 1818.

2.—*CELSIA ARCTURUS*, Vahl. THE BEAR'S-TAIL CELSIA.

SYNONYMS.—*Verbascum arcturus*, Lin.; *V. humile*, Bauh.; *Arcturus creticus*, Clus.; the scollop-leaved *Celsia*.

ENGRAVING.—Bot. Mag., t. 1962.

SPECIFIC CHARACTER.—Radical leaves lyrate; stem leaves oblong. Pedicels much longer than the bracts. Segments of the calyx linear, entire.

DESCRIPTION, &c.—This plant was first described by Bellus, a physician living at Cydonia, in the Island of Candia, who found it growing in that island about the beginning of the last century. It was introduced in 1780; but it has since been found growing wild in New South Wales. It is a very handsome plant, growing from four to six feet high, with large golden-yellow flowers, the filaments of the stamens of which are fringed with long, dark-purple hairs. It is quite hardy, and is generally propagated by seeds, as it is a biennial, or lasts, at most, only about three years. The specific name, *arcturus*, signifies a bear's tail, and alludes to the long and thick raceme of flowers.

3.—*CELSIA CRETICA*, Lin. THE CRETAN, OR LARGE-FLOWERED CELSIA.

ENGRAVING.—Bot. Mag. t. 964.

SPECIFIC CHARACTER.—Radical leaves sinuate, on long petioles; upper leaves cordate, stem clasping. Lower filaments smooth.

DESCRIPTION, &c.—This is, perhaps, the most showy of all the species, on account of the large size of its golden-yellow flowers, which are marked with two reddish-brown spots at the base of the two upper segments. The plant generally grows five or six feet high, and its stem and leaves are covered with whitish hairs. It is a native of the north of Africa and Candia, whence it was introduced in 1752. It is a biennial, and requires protection during winter.

GENUS VI.

RAMONDIA, Rich. THE RAMONDIA.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Plant stemless. Calyx campanulate, five-parted; corolla rotate, five-lobed; lobes somewhat unequal, and hairy at the base. Stamens approximate; anthers perforated at the apex;

stigma rounded. Capsule one-celled, but two-valved, with the valves bent in at the margins and two parietal placentas; many-seeded.

DESCRIPTION, &c.—This genus consists of only one species, which was formerly considered to belong to the genus *Verbascum*, but which is so very different from that genus, both in its habit of growth and its flowers, that we can hardly conceive how it could ever have been placed there. It has no stem, and the anthers are gathered together in the centre of the flower, as in the genus *Solanum*. The name of *Ramondia* was given in honour of M. Ramond, a French Botanist, who travelled in the Pyrenees about the year 1800, and published an account of his journey.

1.—RAMONDIA PYRENAICA, *Rich.* THE PYRENEAN RAMONDIA.

SYNONYMS.—*R. scapigera*, *Jaume St. Hil.*; *Verbascum* Myconi, *Lin.*; *Myconia boraginæna*, *Lapeyr.*; *Chaixia* Myconi, *Lapeyr.*; *Cortusa alpina*, *Trev.*; *Auricula Ursi* Myconi, *Dalech.*; *Sanicula alpina*, *Bauh.*; *Borage-leaved Mullein*.

ENGRAVINGS.—*Bot. Mag.*, t. 236; and our *fig. 5*, in Pl. 81.

SPECIFIC CHARACTER.—Radical leaves ovate, deeply crenate, clothed with long reddish silky hairs on the under side, and white hairs above.

DESCRIPTION, &c.—This is a very pretty little plant, growing only about three or four inches high, and the flower-stalks springing from a dense mass of rough, dark green leaves. The general habit of growth of the plant very much resembles that of a primrose. It is quite hardy, and admirably suited to rock-work; but it will grow in the border, in any common soil that is not too warm and dry. It is propagated by dividing its roots in autumn. It begins to flower in May, and it will continue in blossom nearly all the summer. It is a native of the Pyrenees, whence it was introduced before 1640; as it is described by Parkinson, gardener to the Queen of Charles I., who wrote in that year, as the “Blew Beares Eares with Borage leaves.” The colour of the flowers, however, is not blue, or even purple; but a pinkish lilac.

CHAPTER XXXIX.

SCROPHULARINÆ.

CHARACTER OF THE ORDER.—Calyx four or five-parted, permanent; corolla monopetalous, hypogynous, deciduous, irregular, bilabiate, personate, or ringent, imbricate in æstivation; stamens usually four, didynamous, sometimes only two, and sometimes with the rudiment of

a fifth; ovary two-celled; style one; stigma two-lobed, or undivided; fruit capsular, rarely baccate, two-celled, two and four valved; seeds small; albumen copious; embryo terete, erect, inclosed, straight; radicle inferior, looking to the umbilicus. (*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this order are of various habits and forms; but they nearly all bear a considerable resemblance in their flowers, which are either personate or ringent; that is, bearing more or less resemblance to the Snapdragon, which has a personate corolla, or to the Mimulus, the corolla of which is ringent, or gaping. Some species, however, have a tubular corolla, like that of the Foxglove. Notwithstanding these differences, however, there is a strong family likeness in the flowers of almost all the genera. They are all monopetalous and bilabiate, that is, the petals which form the corolla appear to be joined together, and the mouth of the flower has decidedly two lips, which differ in size, and generally also in shape. The leaves are also generally opposite, and much alike in the different genera. The species are natives of all parts of the world, and their qualities are as various as their forms. The name of the order is taken from the genus *Scrophularia*, in allusion to the supposed use of some of the plants in the cure of scrofula.

GENUS I.

DIGITALIS, *Fusch.* THE FOXGLOVE.*Lin. Syst.* DIDYNAMIA ANGIOSPERMIA.

GENERIC CHARACTER.—Corolla tubular, bilabiate, the lower lip the longest; limb obliquely four-lobed; stamens four, with a very slight rudiment of a fifth.

DESCRIPTION, &c.—This is a very large genus, but the flowers of all the species bear so much resemblance to each other in form, that they are easily recognised at first sight, notwithstanding the difference of colours which



1. *Digitalis carolinensis*—2. *Digitalis ambigua*—3. *Digitalis purpurea* var. *superba*,
 4. *Digitalis laciniata*—5. *Digitalis lutea*.

is very striking, some being yellow, some purple, some scarlet, and some even white. The name of *Digitalis* is very appropriate, as it signifies the finger of a glove. The name of Foxglove does not appear to have been explained.

1.—DIGITALIS PURPUREA, *Fusch.* THE PURPLE OR COMMON FOXGLOVE.

ENGRAVINGS.—Woodville's *Med. Bot.*, t. 24; *Stev. et Church Med. Bot.*, t. 13; *Paxton's Mag. of Bot.*, vol. 10, p. 29; and our *fig. 3*, in *Pl. 82*.

SPECIFIC CHARACTER.—Leaves oblong, very rough, crenate; segments of the corolla ovate, oblong; peduncles straight, equal in length to the calyx.

DESCRIPTION, &c.—The common Foxglove is a well-known British plant, which has often a fine effect in forest scenery, from its showy flowers, and stately habit of growth. It grows wild in almost every part of Europe; but it has never yet been found in any part of North America or Australia. The variety *D. purpurea*, var. *superba*, is (see *fig. 3*, in *pl. 82*), highly ornamental, and is cultivated in gardens solely for its beauty. It will grow freely in any common garden-soil, though it appears to prefer a sandy loam. It was raised by Messrs. Young, of Epsom, about 1840. It continues in blossom for several months, and is propagated by cuttings, or dividing the root.

2.—DIGITALIS LACINIATA, *Lindl.* THE CUT-LEAVED FOXGLOVE.

ENGRAVINGS.—*Bot. Reg.*, t. 1201; and our *fig. 4*, in *Pl. 82*.

SPECIFIC CHARACTER.—Leaves lanceolate, acuminate, lacinated,

glabrous; racemes nearly secund; corolla pubescent; segments ovate, fringed, always bracteate, much shorter than the pedicels.

DESCRIPTION, &c.—This is a very elegant species of Foxglove, extremely unlike the common kinds; the flowers are small, and of a pale yellow. They are also somewhat contracted at the mouth. The leaves are cut, or rather jagged, at the margin. It is a native of Malaga, where its seeds were collected on the mountains by Mr. Philip Barker Webb. It was introduced in 1826, and proves a hardy perennial in British gardens, where it is easily increased by division of the roots, and where it flowers in June and July.

3.—DIGITALIS LUTEA, *Lin.* THE YELLOW FOXGLOVE.

SYNONYMS.—*D. parviflora*, *All.*; *D. minor*, *Tourne.*

ENGRAVINGS.—*Bot. Reg.*, t. 251; and our *fig. 5*, in *Pl. 82*.

SPECIFIC CHARACTER.—Leaves lanceolate, toothed, glabrous;

racemes secund; segments of the corolla ovate, bearded; lower bractees longer than the flowers.

DESCRIPTION, &c.—This is a dwarf plant, with small flowers, and simple but angular stems. The flowers are of a very pale yellow, and they are disposed in dense racemes. The species is a very old inhabitant of our gardens, for it was introduced before 1629. It is found throughout the South of Europe. There are numerous varieties.

4.—DIGITALIS AMBIGUA, *Lin.* THE AMBIGUOUS, OR LARGE YELLOW FOXGLOVE.

SYNONYMS.—*D. grandiflora*, *All.*; *D. ochroleuca*, *Jacq.*; *D. lutea*, *Matt.*; *D. major*, *Park.*

ENGRAVINGS.—*Bot. Reg.*, t. 64; and our *fig. 2*, in *Pl. 82*.

SPECIFIC CHARACTER.—Leaflets of the calyx lanceolate, unequal; corolla pubescent; helmet broad, raised, emarginate; segments of the lower lip moderately acute; leaves ovate-lanceolate, pubescent.

DESCRIPTION, &c.—This is a remarkably handsome plant, a native of Austria, Switzerland, and Germany; and also found occasionally in Siberia and Persia, but only in shady places. It was introduced before 1596, and is quite hardy in British gardens, though it prefers a dry soil, and an open, airy situation. It may be propagated either by seed or by dividing the root. It is evidently nearly allied to the common Foxglove; but it is said not to possess any of the medicinal qualities for which the common Foxglove is so celebrated.

5.—*DIGITALIS FERRUGINEA*, *Ait.* THE IRON-COLOURED FOXGLOVE.ENGRAVING.—*Bot. Mag.*, t. 1828.

SPECIFIC CHARACTER.—Calyx very obtuse, glabrous at the margin; | upper segments of the corolla obsolete; side ones acute; lower lip elongated, retuse, bearded.

DESCRIPTION, &c.—This species is easily distinguished from all the other kinds by its dense spike, or, rather, spike-like raceme of flowers, which is frequently two or three feet long, of a pyramidal form, tapering upwards to a point. It is a hardy perennial, a native of Italy; introduced before 1596. As it generally perishes after flowering, it can seldom be propagated by dividing the roots, and it is consequently necessary always to save the seed.

6.—*DIGITALIS LANATA*, *Waldst. et Kit.* THE WOOLLY-FLOWERED FOXGLOVE.SYNONYMES.—*D. Winteri*, *Roth.*; *D. ferruginea*, *β*, *Lam.*; *D. orientalis*, *Elm.*; *D. eriostachya*, *Fisch.*ENGRAVINGS.—*Bot. Mag.*, t. 1159; *Sweet's Brit. Flow. Gard.*, t. 291.

SPECIFIC CHARACTER.—Raceme crowded, spike-like, woolly; lower lip of the corolla very large.

DESCRIPTION, &c.—This is a very remarkable species, from the great size of the lower lip of the corolla, which is drawn out, so as to be nearly twice the size of the upper lip. In other respects, the spike is not so handsome as that of *D. ferruginea*, as it is narrow at the base. The colour of the flowers is white, delicately veined with pinkish lines. It is a native of Hungary, whence it was introduced in 1790. It is quite hardy in British gardens, where it is generally propagated by seeds.

7.—*DIGITALIS ORIENTALIS*, *Willd.* THE EASTERN FOXGLOVE.ENGRAVINGS.—*Bot. Mag.*, t. 2253; *Rot. Reg.*, t. 554.

SPECIFIC CHARACTER.—Segments of the calyx lanceolate, pubescent; lower lip of the corolla very large.

DESCRIPTION, &c.—This species, though it agrees with the preceding one in the large size of the lower lip of the corolla, yet differs from it greatly in the position of its flowers, which form a very lax raceme instead of a very dense one. The plant is a native of the Levant, and it was introduced in 1820. It requires protection during winter, and is hardly worth the trouble of cultivating, as its flowers are but few in number; and, from their pale colour, and great distance from each other, they are by no means ornamental.

8.—*DIGITALIS TOMENTOSA*, *Sims.* THE WOOLLY-LEAVED FOXGLOVE.SYNONYMES.—*D. verbascofolia*, *Boec.*; *D. hispanica*, *Tourn.*; *D. purpurea*, *Tab.*ENGRAVING.—*Bot. Mag.*, t. 2194.

SPECIFIC CHARACTER.—Leaves woolly, rugged, serrated; petioles somewhat decurrent; flowers spreading.

DESCRIPTION, &c.—This species grows about 2 feet high, with the stem somewhat branched, and numerous pale-reddish flowers, which spread widely in all directions. It is a native of the Continent, whence it was introduced in 1819. It is a hardy biennial, and it is always propagated by seeds. Some botanists suppose it to be a variety of *D. Thapsi*; but it differs from that species in the leaves being of the same colour on both sides, and the footstalks being long instead of being sessile; also in the flowers not being secund, but spreading widely on different sides.

9.—*DIGITALIS CANARIENSIS*, *Lin.* THE CANARY ISLAND FOXGLOVE.SYNONYME.—*Isoplexis canariensis*, *Lin.*ENGRAVINGS.—*Bot. Reg.*, t. 48 ; and our *fig.* 1, in Pl. 82.

SPECIFIC CHARACTER.—Segments of the calyx lanceolate, upper lip

of the corolla bifid, acute ; lower lip lanceolate, nearly equal ; leaves lanceolate, serrated.

DESCRIPTION, &c.—This species is properly a shrub, and will grow to the height of five or six feet ; but as it is generally raised from seed, and will flower the first, or at most the second year, it may, for all practical purposes, be considered as a biennial, and treated accordingly : that is, the seeds may be raised on a hot-bed, kept in a pit during the first winter, and planted out in April in a warm, sheltered situation, where they will begin to flower in May, and continue the greater part of the summer. After the plant has ripened its seeds, it may be suffered to die, which it will do, as soon as the cold weather sets in, as it cannot sustain the severity of an English winter without protection. It is a native of the Canary Isles, whence it was introduced in 1698.

10.—*DIGITALIS OBSCURA*, *Lin.* THE OBSCURE DIGITALIS.SYNONYMS.—*D. hispanica*, *Tourn.* ; the Willow-leaved Foxglove.

SPECIFIC CHARACTER.—Leaves linear-lanceolate, acuminate, entire, glabrous. Segments of the calyx oblong-lanceolate, acute ; upper lip of the corolla bifid ; central lobe of the lower limb ovate.

ENGRAVING.—*Bot. Mag.*, t. 2157.

DESCRIPTION, &c.—This is a very handsome species ; the flowers being red on the outside of the tube, and of a bright yellow veined with red within. The stem is woody at the base ; but the plant is generally considered a perennial ; as, though the stem is woody, it is not permanent, and is generally killed down to the ground every winter, though a fresh stem springs up from the root the following spring. It is a native of Spain, and was introduced in 1778.

OTHER SPECIES OF DIGITALIS.

There are several other species ; but those which have been enumerated are the principal of the perennial kinds.

GENUS II.

ANTIRRHINUM, *Lin.* THE SNAP-DRAGON.*Lin. Syst.* DIDYNAMIA ANGIOSPERMIA.

GENERIC CHARACTER.—Calyx five-parted, oblique. Corolla personate ; tube ample, a little compressed, saccate at the base, and furnished with two parallel and interrupted lines of hairs inside beneath the palate ; lobes of the upper lip erect, and often adpressed to the back by turns ; lower lip spreading, having the middle lobes smaller than the lateral ones, with an ample bearded palate, which closes the throat. Stamens

compressed, rather hairy at the base, having the sterile or fifth one very short or wanting. Stigma two-lobed. Capsule two-celled, woody, ovate, or pear-formed, incurved at top, opening by three holes, or an irregular foramen, under the top. Seeds oblong, truncate, minute ; testa black, more or less engraven, or wrinkled. (*G. Don*)

DESCRIPTION, &c.—All the species belonging to this genus are either perennial or annual plants ; generally with ornamental flowers, and natives of Europe. Many of the smaller species which were formerly considered to belong to this genus, have been removed by modern botanists to the genus *Linaria*. The name of *Antirrhinum* signifies like a snout, and hence also one of the vulgar English names is Calf's Snout. Both these names are evidently taken from the form of the flower ; as is the common English name of the plant, Snap-dragon.

1.—ANTIRRHINUM ASARINA, *Lin.* THE ASARINA, OR HEART-LEAVED SNAP-DRAGON.

SYNONYMES.—*A. asarinum*, *Lam.*; *Asarina cordifolia*, *Monch.*; *A. procumbens*, *Mill.*; *A. Lobelii*, *Dale*; *Orontium asarina*, *Pers.*

SPECIFIC CHARACTER.—Leaves opposite, cordate, crenated; stem procumbent.

ENGRAVINGS.—*Bot. Mag.*, t. 902; and our *fig.* 3, in Pl. 84.

DESCRIPTION, &c.—This is a very pretty species, and particularly suited for rock-work, on account of its procumbent stems. It is, however, rarely seen in British gardens, as it is tender during winter, and rather difficult to manage. It is a native of Italy, and was first introduced in 1699, but it was soon lost. It was again introduced in 1748, when it appears to have been a very popular plant for some time till it was again lost, and since that time it does not appear to have been re-introduced. It is a very handsome plant, and probably, now that our gardeners are so much more skilful than they were formerly, some means may be devised of keeping it through our winters.

2.—ANTIRRHINUM MAJUS, *Lin.* THE COMMON SNAP-DRAGON.

SYNONYMES.—*A. grandiflora*, *Stok.*; *A. murale*, *Sal.*; *Orontium majus*, *Pers.*

Pact. Mag. of *Bot.*, vol. v., p. 55, and vol. x., p. 197; and our *figs.* 1 and 2, in Pl. 84.

SPECIFIC CHARACTER.—Stem thick, twisted, much branched; leaves oblong, tapering at both ends; flowers racemose, crowded.

ENGRAVINGS.—*Eng. Bot.*, t. 129, of the species; of the varieties,

DESCRIPTION, &c.—Few plants vary more than the common Snap-dragon, and few have more beautiful varieties. Some of the flowers are of a pure white, others are rose-coloured, or a rich scarlet; others are double; and another, mentioned by De Candolle, and called by him *Monteridense*, has white and yellow flowers. Besides these, there are two very beautiful varieties figured in Pl. 84, the first of which, *Antirrhinum majus*, *Caryophylloides*, the carnation-flowered Snap-dragon, is one of the most beautiful herbaceous plants in our gardens. It is, however, unfortunately very apt to sport, and consequently it seldom can be kept many years of equal beauty, unless cuttings are made every year from the part on which the flowers are most perfect in their colours. The other variety, *fig. 1*, in plate 84, is said also to be very handsome; but I have never seen it in flower, and have only copied the figure of it from Paxton's Magazine. The common Snap-dragon is a native of Great Britain.

OTHER SPECIES OF ANTIRRHINUM.

A. MOLLE, *Lin.*

This is a native of the Pyrenees, with white flowers, having a yellow palate, and the upper lip striped with purple. It is a procumbent plant, which was introduced in 1752, and requires protection during winter. It takes the name of *molle*, which signifies soft, from its leaves being completely covered with soft clammy hairs.

A. SEMPERVIRENS, *Lapeyr.*

The flowers of this plant are very like those of the last; but the leaves are only slightly downy, and they are evergreen. The stem is also somewhat shrubby at the base. The plant was introduced in 1715. It is a native of the Pyrenees.

A. LATIFOLIUM, *Dec.*

This is a very handsome species, which deserves to be much more generally cultivated than it has hitherto been; the flowers being yellow, with a deep orange palate. The leaves are also large and spotted with purple. It is a native of the south of France and the Pyrenees. There is a variety with purple flowers.



1. *Antirrhinum majus*, var. *quadricolor*. — 2. *Antirrhinum majus*, var. *Corypholobos*.
3. *Antirrhinum Serotina*.

A. TORTUOSUM, *Bosc.*

This is a native of Sicily and the south of Italy, which grows with curiously-twisted branches. The flowers are of a rich purple, and are larger than those of any other species of the genus.

A. SICULUM, *Lin.*

Is also a native of Sicily, introduced in 1804, with small straw-coloured flowers. There are two varieties, one of which has yellow flowers; and another, the flowers of which are purple and yellow.

There are some kinds of perennial *Linarias*; but the only species which is decidedly ornamental is *L. Dalmatica*, which was first introduced as far back as 1731, but which was soon lost; and though it was re-introduced in 1834, it seems to have again disappeared. It is a native of Persia, and requires protection in British gardens.

GENUS III.

MIMULUS, *Lin.* THE MONKEY-FLOWER.*Lin. Syst.* DIDYMANIA ANGIOSPERMIA.

GENERIC CHARACTER.—Calyx tubular, five-angled, five-toothed. Corolla ringent; upper lip two-lobed; lower one trifid, usually bigibbous at the base; segments all flat. Stamens four, didynamous, inclosed; cells of anthers diverging or divaricate, at length sub-con-

fluent. Stigma bilamellate. Capsule hardly furrowed, two-valved, with a loculicidal dehiscence; valves entire, with flat margins, dissepiment at length free; placentas adnate. (*G. Don.*)

DESCRIPTION, &c.—Most of the species of *Mimulus* are herbaceous plants, with rough hairy leaves and square succulent stems. The leaves are opposite, and generally toothed. The flowers are solitary, and spring from the axils of the leaves. The name of *Mimulus* is said to be derived from the Latin word for monkey, and hence the English name of Monkey-flower.

§ 1.—*Stems erect; leaves narrow, entire, feather-nerved; calyx tubular.*1.—MIMULUS RINGENS, *Lin.* THE GAPING MIMULUS.

SYNONYMS.—*Euphrasia floridana*, *Pluk.*; *Lysimachia galericulata*, *Gron.*; *Digitalis perfoliata*, *Moris.*

SPECIFIC CHARACTER.—Leaves oblong or lanceolate, a little toothed; flowers with a short tube, and very large lips.

ENGRAVING.—*Bot. Mag.*, t. 283.

DESCRIPTION, &c.—This plant has pale lilac flowers, which are remarkable for the large size of the lips, whence the specific name of *ringens*, or gaping. The leaves are narrow, and very slightly serrated. The plant is a hardy perennial, growing about two feet high, with an erect, though rather slender stem. Like all the kinds of *Mimulus*, it succeeds best in a moist and somewhat shady situation, with a loamy soil. It is a native of Virginia, whence it was introduced in 1759; but it is now seldom seen in British gardens, as we have so many handsomer species of the genus.

2.—MIMULUS ALATUS, *Ait.* THE WINGED MIMULUS.

ENGRAVING.—*Lodd. Bot. Cab.*, t. 410.

SPECIFIC CHARACTER.—Glabrous. Leaves large, oblong-elliptic; petioles decurrent; stem four-winged from the decurrence of the

leaves; leaves unequally but slightly serrated. Calyx plicate, truncate, with linear teeth.

DESCRIPTION, &c.—This species has very nearly the same habit as the last, but the flowers are of a bright blue. It is a native of North America, whence it was first introduced in 1783. It was, however, soon lost,

and was re-introduced in 1804. It is quite hardy, and easily propagated by dividing the roots; but it is rarely seen in British gardens.

§ 2.—*Stems frequently decumbent; leaves three or five-nerved, deeply toothed; calyx ovate, usually inflated.*

3.—MIMULUS LEWISII, Pursh. MR. LEWIS'S MIMULUS.

SPECIFIC CHARACTER.—Plant small, erect, downy; leaves oblong-lanceolate, acute, deeply denticulated; flowers few, on very long peduncles.

DESCRIPTION, &c.—This is a dwarf plant, with very large purple flowers, which do not appear till August. It was found on the head-springs of the Missouri, and was introduced in 1824.

4.—MIMULUS CARDINALIS, Doug. THE BRIGHT SCARLET MIMULUS.

ENGRAVINGS.—Sweet's Brit. Flow. Gard., 2d ser., t. 358; and our fig. 2, in Pl. 83.

SPECIFIC CHARACTER.—The whole plant is copiously clothed with long white viscid hairs, which emit, when rubbed, a musky odour;

leaves ovate-lanceolate, acutely dentate; the peduncles much longer than the calyx; teeth of the calyx acute; lobes of the corolla emarginate; anthers hispid.

DESCRIPTION, &c.—This very handsome species is one of the plants discovered by Douglas in California; and, though it was introduced only in 1835, it has become one of the commonest, as well as one of the most beautiful, ornaments of our flower-gardens. It will grow in any common soil which is not too dry; and it may be increased with the greatest facility, either by cuttings or by seeds: it ripens the latter so freely, that it may safely be allowed to sow itself when it is wanted to spread rapidly. The colour of the flowers varies considerably, according to the situation in which it is grown. Where the plant has plenty of free air and sun, the flowers are of a brilliant scarlet; but they become of a dull orange when the plant is grown in a close situation and a dense atmosphere.

5.—MIMULUS ROSEUS, Doug. THE ROSE-COLOURED MIMULUS.

ENGRAVINGS.—Bot. Reg., t. 1591; Sweet's Brit. Flow. Gard., 2d ser., t. 210; Lodd. Bot. Cab., t., 1976; and our fig. 5, in Pl. 83.

SPECIFIC CHARACTER.—Glandulously pubescent; leaves elliptic-

oblong, acute, nearly entire; calyx shorter than the peduncles; teeth of the calyx acuminate, nearly equal; lobes of the corolla emarginate.

DESCRIPTION, &c.—This is a smaller plant than *M. cardinalis*; it is completely covered with glandular hairs, which are very soft and slimy to the touch, and have a strong smell of musk. The flowers are rather small, and of a bright rose-colour, and the leaves are very slightly toothed. The stem is nearly round, with only two projecting ribs, instead of four, as is usual in plants belonging to this genus. This species is also a native of California, where it was found by Douglas, and sent home by him in 1833. It hybridises freely with *M. cardinalis*; and several magnificent varieties have been produced between these species, particularly in the Edinburgh Botanic Garden. *M. Macleaniana* (see fig. 1, in Pl. 83) is a beautiful hybrid, raised in Ireland, between *M. cardinalis* and *M. roseus*.

6.—MIMULUS LUTEUS, Lin. THE YELLOW-FLOWERED MIMULUS.

ENGRAVINGS.—Bot. Reg., t. 1030; Bot. Mag., t. 1501, t. 3336, and t. 3363; Sweet's Brit. Flow. Gard., 2d ser., t. 406; and our fig. 4, in Pl. 83.

SPECIFIC CHARACTER.—Leaves dentate; upper ones sessile, ovate; lower ones petiolate; corolla much larger than the calyx; segments transverse; palate bearded.

DESCRIPTION, &c.—This plant varies very much, and hybridises freely with *M. roseus*. In the seedling varieties of the parent plant, the labellum, or lower lip, is often blotched with red. The flowers are very large,



1. *Mimulus Macbridei*. — 2. *Mimulus Cardinalis*. — 3. *Mimulus Smithii*.
 4. *Mimulus Luteus*. — 5. *Mimulus Roseus*.

and the plant generally of robust growth. Most of the kinds of *Mimulus* do best in loam ; but this species has the finest flowers when it is grown in a pot filled with coarse gravel, and placed in a saucer full of water. It requires a slight protection during winter. It is a native of Chili, whence it was introduced in 1812. Some of the most beautiful varieties are, *M. luteus Youngiana* and *M. l. Smithii* (see fig. 3, in Pl. 83).

7.—MIMULUS MOSCHATUS. *Doug.* THE MUSK PLANT.

ENGRAVING.—Bot. Reg., t. 1118.

SPECIFIC CHARACTER.—Stem creeping ; leaves ovate, dentate, glandulously hairy ; peduncles twin, shorter than the leaves ; limb of corolla divided into five nearly equal lobes ; lower segment pubescent.

DESCRIPTION, &c.—The whole of this little plant is entirely covered with glandular hairs, which emit a very strong, but an agreeable fragrance of musk, which, in very hot weather, is spread to a considerable distance, and is particularly powerful when the plant is trodden upon. The blossoms are of a clear bright yellow, and are produced in great profusion all the summer. The plant grows best in a damp, shady border, in peat soil. It is tolerably hardy, and does not require any protection, unless the winter happens to be uncommonly severe. It is easily propagated either by seeds or division ; and, indeed, it spreads so rapidly from its creeping stems, which throw out roots at every node, as soon to become troublesome in small gardens, unless care be taken to keep it within bounds. Few plants are more suitable for rock-work.

OTHER SPECIES OF MIMULUS.

M. GUTTATUS, Dec.

This appears to be only a variety of *luteus*.

M. PROPINQUUS, Lin.

This species was introduced from North America in 1827, and appears nearly allied to *M. moschatus*, but is of more upright growth.

M. PERFOLIATUS, Kunth.

Is a curious little plant, with a winged stem, and small yellow flowers, but it is now removed to another genus, on account of its white, fleshy fruit, which resembles that of the Snowberry tree.

GENUS IV.

VERÓNICA, *Lin.* THE SPEEDWELL.

Lin. Syst. DIANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx four, rarely five-parted, campanulate or compressed. Corolla rotate, with a very short tube, and a four-parted spreading limb ; segments all entire ; upper one the broadest. Stamens two, situated at the sides of the upper segment of the corolla, diverging without any vestige of the lower ones. Anthers two-celled ; cells confluent at top. Stigma hardly thickened. Valves of capsule septiferous in the middle, or bipartite. Seeds naked.—(*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this genus are, generally speaking, too much like British weeds, and too small in their flowers, to be worth cultivating as ornamental plants in a flower-garden. They all bear so strong a family likeness to the common Speedwell (which is common in every wood), that I have not thought it worth while to figure any of them ; and I have only described a few of the species, the flowers of which may be

considered pretty. The derivation of the word *Veronica* is very uncertain. Linnæus says that it has been changed from *Vetonica*, the ancient Roman name for one of the provinces of Spain, and that it is applied to this genus from several of the species growing wild in that country. Other botanists derive it from *ver*, the spring; but this appears very improbable, as very few of the species flower before the middle of summer

1.—VERONICA NEGLECTA, *Vahl*. THE NEGLECTED VERONICA.

SYNONYME.—*V. canescens*, *Scbrod.*

ENGRAVING.—*Swt. Brit. Flow. Gard.*, t. 55.

SPECIFIC CHARACTER.—The whole plant is covered with a thick

white pubescence; stem branched and dividing into several terminal spikes of flowers; radical leaves petiolate; oblong-obtus; stem leaves opposite, lanceolate, tapering at both ends.

DESCRIPTION, &c.—A very handsome species from the brilliant and very rich dark-blue of its flowers, and its whitish silvery leaves. It is quite hardy, and it may be propagated either by dividing the roots, or by seeds, which it ripens in abundance. In rich soil, it often grows about eighteen inches high; but in poor soil, or in pots, it rarely exceeds a foot. It is a native of Siberia, and was introduced in 1797.

2.—VERONICA GENTIANOIDES, *Vahl*. THE GENTIAN-LIKE VERONICA.

SYNONYMS.—*V. orientalis*, *Tourn.*; *V. gentianifolia*, *G. Don.*

ENGRAVING.—*Bot. Mag.* t. 1002.

SPECIFIC CHARACTER.—Stem ascending; raceme terminal; calyx

divided into four unequal parts. Stem leaves elliptic, sessile, radical ones elongated at the base.

DESCRIPTION, &c.—The flowers of this very distinct species are of a very pale blue, beautifully streaked with blue of a much darker colour. The leaves are also very remarkable; those of the root are at least six inches long, tongue-shaped, and decurrent; that is, with the petiole growing to the stem, so as to form a kind of wing. The species is a native of Mount Caucasus, whence it was introduced in 1805.

3.—VERONICA PERFOLIATA, *R. Brown*. THE PERFOLIATE VERONICA.

ENGRAVING.—*Bot. Mag.* t. 1936.

SPECIFIC CHARACTER.—Raceme lateral, pedunculate, many-flowered.

Leaves entire, very smooth, ovate-acuminate, connate at the base. Capsule bipartite.

DESCRIPTION, &c.—This species is remarkable for its connate leaves, and for the delicacy of its flowers. It grows about two feet high, with very few branches. It is a native of the country round Port Jackson, in Australia, and it requires protection during winter. It was introduced in 1815.

OTHER SPECIES OF VERONICA.

These are very numerous, but the handsomest kinds are the following:—

V. PANICULATA, *Pall.*

The racemes of this species are very long and loose, and the flowers are blue or purple. It is a native of Tartary, Siberia, and Caucasus. It was introduced in 1797.

V. AZUREA, *Schott.*

A very beautiful plant with pale-blue flowers. It first appeared in British gardens about 1821; but its native country is unknown.

V. LONGIFOLIA, *Lin.*

This plant is a native of Europe and Siberia; but it is only found in damp places. There are many varieties; but the species was introduced in 1731.



1. *Penstemon brevis* 2. *Penstemon brevis* 3. *Penstemon brevis*
4. *Penstemon brevis*

V. INCANA, *Lin.*

This plant is quite white with hoary tomentum, which covers both the leaves and stem. It was introduced in 1759. The flowers are either blue or purple.

V. SPICATA, *Lin.*

This is a very common species all over Europe; but in England it is only found in high, dry, chalky pastures. There are several varieties.

V. PINNATA, *Ait.*

This species has pinnate leaves. The flowers are either blue or white. It is a native of Siberia, whence it was introduced in 1776.

V. LACINIATA, *Ait.*

This species is remarkable for its leaves, which are produced in tufts, and are so curiously pinnatifid as to appear jagged. The species is a native of Siberia, whence it was introduced in 1780.

V. ALPINA, *Lin.*

This species is common on all the Alps of Europe, and it is found in various places from the Highlands of Scotland to the Himalayan Mountains.

V. OFFICINALIS, *Lin.*

This is the common English Speedwell. It is a well-known British plant, with a creeping root, or rather underground stem, which is always found in damp woods. It was formerly much used in medicine, and it was supposed by Simon Paullix, an old Danish Botanist, to be the true Chinese tea. It is now very seldom used.

There are many other species of Veronica, several of which are common British plants. The most remarkable of these is, perhaps, the Brook-lime, *V. Beccabunga*.

GENUS V.

PENTSTEMON, *Mich.* THE PENTSTEMON.*Lin. Syst.* DIDYNAMIA ANGIOSPERMIA.

GENERIC CHARACTER.—Calyx five-parted, with one distinct solitary bract. Corolla ventricose, bilabiate. Stamens four, with the rudiment of a fifth; two of them longer than the others; anthers distinct. Capsule ovate, two-celled, two-valved, many-seeded. Seeds angular.

DESCRIPTION, &c.—All the species belonging to this genus are either perennials or under-shrubs, with smooth opposite leaves, which are generally drawn out to a long point. The flowers are disposed in loose racemes, and are generally very showy; the shape of the corolla is generally tubular, and decidedly bilabiate, the upper lip being much shorter than the other; but sometimes it is almost campanulate, and five-lobed. The anthers are frequently woolly or hairy, and the lower lip bearded at the throat. All the species are natives of North America. The name of Pentstemon, which signifies five stamens, alludes to the rudiments of a fifth stamen being conspicuous in the plants belonging to this genus. Some botanists make this genus and *Chelone* into a separate order, called *Chelonæ*.

SECTION 1.—*Anthers naked.*§ 1.—*Corolla sub-campanulate; limb almost equally five-lobed*

1.—PENTSTEMON SPECIOSUM, Doug. THE SHOWY PENTSTEMON.

ENGRAVINGS.—Bot. Reg., t. 1270; Swt. Brit. Flow. Gard., 2d ser., t. 259; and our *fig. 1*, in Pl. 85.

SPECIFIC CHARACTER.—The whole plant free from hairs or tomentum.

Leaves quite entire. Flowers disposed in numerous many-flowered cymes, so as to form a pyramidal panicle; lobes of the corolla nearly equal.

DESCRIPTION, &c.—This is a very showy species, from the large size and great number of its flowers. It is a native of the north-west coast of North America, whence it was introduced by Douglas, in 1827. It grows about three feet high, with rather a stiff stem, and long, glossy, somewhat fleshy leaves, the upper surface of which is of a very dark green, while the under surface is pale and bluish. The flowers vary in colour, from a beautiful and brilliant cobalt blue to a dark purple, and they continue to appear in succession nearly all the summer. The plant thrives most in a mixture of peat and loam; but it is rather difficult to propagate, as, from the great abundance of its flowering stems, it increases very little by the root, and though it produces abundance of seeds, they are difficult to manage, as they will not vegetate in heat; and yet the young plants must be protected from too much cold.

2.—PENTSTEMON ACUMINATUM, Dougl. THE POINTED-LEAVED PENTSTEMON.

ENGRAVING.—Bot. Reg., t. 1285.

SPECIFIC CHARACTER.—Stem ascending. Leaves glabrous, glaucous; radical leaves ovate-oblong, with a very long petiole, entire, somewhat

fleshy; bracts cordate, acuminate, sessile; stem clasping. Flowers in a close raceme; mouth of the corolla inflated; segments of the limb retuse.

DESCRIPTION, &c.—This species is very inferior to the preceding one, both in the size of the plant, and in the number and beauty of the flowers. It is a native of the sandy plains bordering the Columbia in California, and it grows there with the lower part of its stems and leaves “immersed in sharp, coarse white sand.” It is probably from this habit of growth that it is so difficult to manage in this country, as it is found almost impossible to propagate it by any of the ordinary modes. It seldom ripens seeds, and it is very difficult to strike from cuttings. The stem grows about a foot high, and the flowers are purple. The species was discovered by Douglas, in California, and sent home by him in 1827, with the preceding species. *P. acuminatum* flowers from June to August, and produces abundance of blossoms; it is easily distinguished from the other Pentstemons by its leaves.

3.—PENTSTEMON COBÆA, Nutt. THE COBÆA-LIKE PENTSTEMON.

ENGRAVINGS.—Swt. Brit. Flow. Gard., 2d ser., t. 348; Bot. Mag., t. 3465; and our *fig. 3*, in Pl. 87.

SPECIFIC CHARACTER.—Glandularly pubescent. Leaves sharply

serrulated; radical ones lanceolate and petiolate; stem ones ovate, sessile, and somewhat stem-clasping. Corolla with the throat inflated; sterile filament exerted and bearded.

DESCRIPTION, &c.—This species is remarkable for the large size and pale colour of its flowers, which bear considerable resemblance to those of the Cobæa, and which are produced in numerous cymes, bearing from three to five flowers each. The stem generally grows about three feet high, and the lower leaves are three or four inches long, so that this species is only suitable where there is abundance of room. It is a native of the rich meadows on the banks of the Red River, where it was first discovered by Nuttall, growing in dry situations, and always in calcareous soil. It has since been found in the interior of Texas by Drummond. It was introduced in 1835, and it appears quite hardy in British gardens, where it is generally propagated by cuttings, which strike readily. It is irregular in its time of flowering.



1, *Penstemon digitalis*.—2, *Penstemon angustifolius*.—3, *Penstemon venustus*.
4, *Penstemon heterophyllum*.—5, *Chelone barbata*.—6, *Chelone lyonii*.

4.—PENTSTEMON DIGITALIS, *Nutt.* THE FOXGLOVE-LIKE PENTSTEMON.SYNONYME.—*Chelone digitalis*, *Swt.*ENGRAVING.—*Swt. Brit. Flow. Gard.*, t. 120; and our *fig. 1*, in *Pl. 88*.

SPECIFIC CHARACTER.—Stem erect, sub-pubescent. Leaves smooth and glossy, slightly toothed with very small gland-like teeth, and covered with numerous small dots; lower leaves oblong-lanceolate,

attenuated at the base and running down the petiole, strongly nerved beneath, and channelled on the upper side; stem-leaves cordate, ovate, acuminate, sessile. Flowers in racemose panicles; corollas clothed with glandular hairs, slightly bearded in the throat; sterile stamens longer than the others, and bearded half way down with long white hairs.

DESCRIPTION, &c.—This species was found by Nuttall in the Arkansa territory of North America, and sent to England in 1824. It is quite hardy in British gardens, and will grow in any common garden soil. It is most readily propagated by cuttings, which will soon strike root if planted under hand-glasses. The flowers are white, with a very slight tinge of pink, and they appear from June to September. The plant grows from one to two feet high.

§ 2. *Flowers appearing as if they were verticillate. Corolla bilabiate.*5.—PENTSTEMON OVATUM, *Dougl.* THE OVAL-LEAVED PENTSTEMON.ENGRAVINGS.—*Bot. Mag.*, t. 2903; *Swt. Brit. Flow. Gard.*, 2nd *ser.*, t. 211.

SPECIFIC CHARACTER.—Pubescent. Leaves ovate-cordate, dentately

serrated; root leaves petiolate, upper ones stem-clasping. Flowers in a racemose panicle; segments of the calyx lanceolate; corolla glandular.

DESCRIPTION, &c.—This is a very beautiful species, as, though the flowers are small, they are extremely numerous, and of a most brilliant and beautiful blue. They are also disposed in a number of small cymes so as to form a large and very handsome panicle. The species is a hardy perennial, a native of the limestone rocks among the mountains near the Great Rapids of the Columbia River; and it was introduced by Douglas, in 1826. It grows best in calcareous soil, particularly in chalk, or chalk mixed with loam; and it is increased either by seeds which it ripens freely, or by cuttings. It varies very much as regards the colour of the flowers.

6.—PENTSTEMON PROCERUM, *Dougl.* THE TALL PENTSTEMON.ENGRAVING.—*Bot. Mag.*, t. 2954.

SPECIFIC CHARACTER.—Stem erect, straight, nearly simple. Leaves lanceolate, entire; lower ones petiolate, upper ones sessile, subcon-

nate. Flowers in a verticillate spike; segments of the calyx membranaceous, mucronate; sterile filaments toothless at the base. (*G. Don.*)

DESCRIPTION, &c.—This species is more singular than beautiful. The flowers, which are purple and very small, are disposed in small whorls round the stem, which is quite straight and erect, and from one to two feet high, the whole being at a considerable distance from each other. The species is a native of California, where it was found in swamps and overflowed meadows near the Grand Rapids, on the river Columbia. It was introduced in 1827, and it blossoms in June. It ripens seeds freely.

7.—PENTSTEMON CONFERTUM, *Dougl.* THE CROWDED-FLOWERED PENTSTEMON.ENGRAVING.—*Bot. Reg.*, t. 1260.

SPECIFIC CHARACTER.—Leaves quite entire, glabrous; radical ones spatulate, acuminate, on long petioles; superior ones sessile, ovate, acuminate; peduncles axillary, short, bearing each a cyme of crowded

flowers, which appear verticillate; upper floral leaves reduced to jagged or serrated bracteas; calycine segments acute, mucronate, jagged or serrated; corolla a little longer than the calyx; sterile filament bearded. (*G. Don.*)

DESCRIPTION, &c.—The flowers are yellowish, and very small, being disposed in distant whorls, like those of the preceding species. It is by no means handsome, but it has the advantage of being quite hardy, and ripening its seed freely. It is a native of California, whence it was introduced in 1827.

8.—PENTSTEMON PRUINOSUM, *Dougl.* THE BLOOM-LEAVED PENTSTEMON.ENGRAVINGS.—Bot. Reg., t. 1280; and our *fig.* 4, Pl. 85.

SPECIFIC CHARACTER.—Leaves grey, radical ones petiolate, entire, or toothed; cauline leaves toothed, sessile; superior bractes entire;

flowers verticillate; calyxes and bractes villous; corolla glabrous, twice as long as the calyx; segments of the limb roundish, entire. (*G. Don.*)

DESCRIPTION, &c.—The flowers of this species are disposed in whorls like those of the two preceding kinds; but they are so much larger, that they make a much better appearance. They are of a very beautiful blue, with a white throat, and the leaves are perfectly glaucous. The species was found by Douglas, on the banks of the Columbia, whence it was introduced in 1827. It is quite hardy, and a true perennial; but according to Dr. Lindley, it is apt to exhaust itself so much by over-flowering, as frequently to die the second year. To prevent this, he advises the cultivator to pinch off part of the flower-buds.

§ 3.—*Corolla bilabiate. Upper lip of corolla compressed; the lower plaited.*9.—PENTSTEMON ATTENUATUM, *Dougl.* THE ATTENUATED-LEAVED PENTSTEMON.

ENGRAVING.—Bot. Reg., t. 1295.

SPECIFIC CHARACTER.—Stem erect, pilose at top; radical leaves elliptic, acute, petiolate; superior ones ovate-oblong, stem-clasping,

sessile, all quite glabrous and quite entire; panicle strict, and are, as well as the calyxes and corollas, downy; capsule glabrous; sterile filament bearded. (*G. Don.*)

DESCRIPTION, &c.—This is a very handsome species and quite hardy. The stem is from one to two feet high; it grows freely in any common garden soil, and it is propagated by division of the roots. The leaves are large and handsome, and of a very deep green; and the flowers, which are of a pale yellow, are disposed in a close panicle, and not in whorls. They are produced from July to the end of September. The species is a native of the mountains of California, whence it was sent home in 1827.

10.—PENTSTEMON DEUSTUM, *Dougl.* THE BURNED PENTSTEMON.

ENGRAVING.—Bot. Reg., t. 1318.

SPECIFIC CHARACTER.—Stem almost simple, ascending, glabrous; leaves deeply toothed; radical ones ovate-oblong; those near them

spathulate; cauline leaves oblong, acute, sessile; upper ones almost quite entire; calyxes glabrous; limb of the corolla flat, with retuse segments; upper ones the smallest. (*G. Don.*)

DESCRIPTION, &c.—This species bears considerable resemblance to the last, both in its habit of growth, and in the colour of its flowers, but it differs in its coarsely-jagged leaves. It is a native of North West America, where it was found by Douglas, on open, rocky plains, exposed to the burning sun, and hence its somewhat singular name. It is quite hardy, and is readily increased by division. It was introduced in 1829.

11.—PENTSTEMON DIFFUSUM, *Dougl.* THE DIFFUSE PENTSTEMON.

ENGRAVING.—Bot. Reg., t. 1132.

SPECIFIC CHARACTER.—Stem branched; leaves ovate-oblong, glabrous, unequally serrated; peduncles axillary, many-flowered, the whole

forming a terminal panicle; calyx turbinate, with jagged segments; sterile filament of about the same length as the tube, bearded.

DESCRIPTION, &c.—This is a very handsome species, with evergreen leaves, and decumbent rooting-stems, by which it is readily increased. It is a native of the open ground and banks of rivers in North West America, where it was found in great abundance by Douglas, by whom it was introduced in 1827. It grows freely in any light soil, and produces abundance of flowers from June to October.



Penstemon spectabilis var. *subulatus* — *Penstemon grandis* — *Penstemon laevis*
Penstemon campanulatus

12.—PENTSTEMON STATICIFOLIUM, *Lindl.* THE STATIC-LEAVED PENTSTEMON.ENGRAVING.—*Bot. Reg.*, t. 1770.

SPECIFIC CHARACTER.—Stems ascending, pubescent; radical leaves oblong-lanceolate, narrowed to the base, entire, glabrous; cauline leaves sessile, cordate-ovate, toothed, pubescent; cymes nearly sessile, tomentose; corolla ventricose, pubescent. (*G. Don.*)

DESCRIPTION, &c.—The flowers are large, and very handsome; but the plant, in its habit of growth, is very nearly allied to *P. diffusum*. It grows best in a peat border. It is a native of California, and was introduced in 1834. The root-leaves are sometimes seven inches long.

13.—PENTSTEMON TRIPHYLLUM, *Dougl.* THE THREE-LEAVED PENTSTEMON.ENGRAVINGS.—*Bot. Reg.*, t. 1245; and our *fig. 2*, in Pl. 85.

SPECIFIC CHARACTER.—Humble; leaves three-four in a whorl, glabrous, bluntly cut; lower ones oblong; floral ones entire, linear-lanceolate, usually alternate; peduncles two-three flowered, and are, as well as the calyxes, clothed with cobwebbed down; segments of corolla oblong, obtuse; those of the lower lip equal; sterile filament bearded. (*G. Don.*)

DESCRIPTION, &c.—The elegance of the habit of growth of this plant forms an agreeable contrast to that of most of the other kinds of *Pentstemon*. The stem is slender, and very much branched, and the flowers are produced in small panicles at the tips of the branches. It is a native of California, whence it was introduced in 1827.

14.—PENTSTEMON GRACILE, *Nutt.* THE SLENDER PENTSTEMON.ENGRAVINGS.—*Bot. Mag.*, t. 2945; and our *fig. 2*, in Pl. 86.

SPECIFIC CHARACTER.—Stem smooth and slender; leaves smooth, linear, acute, half stem-clasping, sharply serrated; panicles simple, few-flowered; sterile filament bearded longitudinally; corolla smooth inside; segments of the calyx linear, oblong.

DESCRIPTION, &c.—The flowers are small and tubular, varying from blue to purple. The stem is erect, and the leaves sharply serrated. The plant was discovered first by Mr. Nuttall, in the Mandan territory; but it has since been found by several collectors in different parts of North America. It was introduced in 1824.

15.—PENTSTEMON PUBESCENS, *Ait.* THE DOWNY PENTSTEMON.SYNONYMS.—*Chelone Pentstemon*, *Lin.*; *Asarina erecta*, *Mill.*ENGRAVING.—*Bot. Mag.*, t. 1424.

SPECIFIC CHARACTER.—Stem pubescent; leaves repandly serru-

lated, lanceolate-oblong, sessile, stem-clasping; flowers in panicles; the sterile filament bearded from the summit below the middle. (*G. Don.*)

DESCRIPTION, &c.—This is a very pretty plant, with rather broad leaves and abundance of flowers, slightly tinted with pink. It is a native of the Alleghany Mountains, in North America, whence it was introduced before 1738; and hence it was one of the first species of *Pentstemon* introduced into our gardens. It very frequently dies the second year, having exhausted itself by over-flowering.

16.—PENTSTEMON LÆVIGATUM, *Michx.* THE SMOOTH PENTSTEMON.SYNONYMS.—*Chelone lævigata*, *Pers.*; *Chelone Pentstemon*, *var. Mill.*ENGRAVINGS.—*Bot. Mag.*, t. 1425; and our *fig. 3*, in Pl. 86.

SPECIFIC CHARACTER.—Leaves smooth, nearly entire; sterile filament bearded in the upper part; shorter than the corolla.

DESCRIPTION, &c.—The principal difference between this and the preceding species consists in *P. pubescens* having its leaves covered with a soft down; whilst in *P. lævigatum* these parts are perfectly smooth. The present species is also found in the more southern parts of North America, and it is rather more tender than

P. pubescens. It, however, partakes of the habit of that species in frequently dying after it has flowered. The seeds, however, ripen freely, and it may thus be easily preserved when treated as a biennial. It was introduced in 1776 by Dr. Fothergill.

§ 4.—*Corolla tubular; lower lip usually bearded.*

17.—PENTSTEMON PULCHELLUM, *Lindl.* THE PRETTY PENTSTEMON.

ENGRAVING.—*Bot. Reg.*, t. 1138.

SPECIFIC CHARACTER.—Stem pubescent; leaves smooth, sessile, linear-oblong, serrulated. Panicles simple, secund; calyx pubescent;

corolla ventricose, slightly hairy within; sterile filament bearded; tube of the corolla longer than the stamens.

DESCRIPTION, &c.—This exceedingly handsome species is a native of Mexico, whence it was introduced in 1826. It greatly resembles a foxglove, and the colour of its flowers is a pale pinkish lilac. It is rather tender, but it will grow rapidly if planted in a warm border open to the south.

18.—PENTSTEMON ROSEUM, *G. Don.* THE ROSE-FLOWERED PENTSTEMON.

SYNONYMS.—*Pentstemon angustifolium*, *Lindl.*; *Chelone rosea*, *Sut.*

ENGRAVINGS.—*Bot. Reg.*, t. 1122; *Sweet's Brit. Flow. Gard.*, t. 230; and our *fig. 2*, in Pl. 88, under the name of *P. angustifolium*.

SPECIFIC CHARACTER.—Stem smooth; leaves lanceolate, acute,

sharply serrulated, sessile, glabrous; upper ones broadest. Peduncles axillary, generally three-flowered; corolla small, somewhat inflated, the lower lip densely bearded; segments of the limb very short; sterile filament bearded in the upper part.

DESCRIPTION, &c.—The stem is very much branched, but the branches are all erect. They are smooth and glossy, but frequently covered with a glutinous substance. The leaves are crowded, and very sharply serrated, the points of the teeth being bent in a little. The flowers are produced in little tufts, which spring from the axils of the leaves; they are of a bright rose-colour, and rather small and tubular. The pollen is quite white. The species is a native of Mexico, whence it was introduced about 1825. It is propagated by cuttings.

19.—PENTSTEMON CAMPANULATUM, *Willd.* THE BELL-FLOWERED PENTSTEMON.

SYNONYME.—*Chelone Campanuloides*, *Andr.*

ENGRAVINGS.—*Bot. Mag.*, t. 1878; *Bot. Rep.*, t. 40; and our *fig. 4*, in Pl. 86.

SPECIFIC CHARACTER.—Stem smooth; sterile filament bearded in the upper part; corolla campanulate; segments of the calyx linear-lanceolate; leaves lanceolate, acuminate, sharply serrated.

DESCRIPTION, &c.—This species is very nearly allied to the last, but the flowers are much larger, and they are produced two together, instead of in threes. The species is a native of Mexico, whence it was introduced in 1794. It is quite hardy, and may be propagated either by cuttings or by seeds. It continues flowering all the summer, and is very ornamental. It was introduced by Sir Joseph Banks.

20.—PENTSTEMON ATROPURPUREUM, *G. Don.* THE DARK-PURPLE PENTSTEMON.

SYNONYME.—*Chelone atropurpurea*, *Sut.*

ENGRAVING.—*Sweet's Brit. Flow. Gard.*, t. 235.

SPECIFIC CHARACTER.—Stem suffruticose at the base, but more or less flexuose in the upper part, shining, but with the upper part covered with glandular hairs; leaves sessile, sharply serrulated, glabrous, lower

ones lanceolate, and attenuated at the base, upper ones ovate, acuminate, stem-clasping; peduncles axillary, generally three-flowered; calyx and corolla covered with glandular pubescence; corolla tubular, narrow towards the base.

DESCRIPTION, &c.—The shape of the flowers of this plant bears considerable resemblance to that of the flowers of *P. campanulatum*; but their colour is a dark purple, and they are produced in tufts of three each, instead of being in pairs. The whole plant is also larger, the stem growing from three to five feet high, and the

flowers being disposed in long terminal paniced racemes. It is a native of Mexico, whence it was introduced in 1824, by the late A. B. Lambert, Esq. It should be grown in strong, rich soil, and it requires a little protection during severe frosts.

21.—PENTSTEMON GENTIANOIDES, *H. B. et K.* THE GENTIAN-LIKE PENTSTEMON.

ENGRAVINGS.—Bot. Reg. for 1838, t. 3; and our *fig. 1*, in Pl. 86, of var. *splendens*.

pubescent; leaves ovate-lanceolate, quite entire, smooth; segments of the calyx ovate; corolla beardless; sterile filament glabrous.

SPECIFIC CHARACTER.—Stem extremely slender in the upper part,

DESCRIPTION, &c.—This very popular plant is a native of Mexico, whence it was introduced in 1825; though for many years it was but little cultivated from its being supposed to be tender. About the year 1838, it was, however, found that it would grow freely in the open air, and stand the winter unprotected in any situation that was tolerably dry. It also seeds freely, and thus is very easily propagated. It grows about three feet high, and flowers freely from June to September; forming one of our most ornamental border flowers. It also varies very much when raised from seed, and some of the varieties thus raised are extremely splendid, particularly that figured in Pl. 86, the flowers of which are nearly three times as large as those of the species. The following mode of treating the plant when raised from seeds, is given in the *Botanical Register*:—"The seeds should be sown about the middle of May, on a bed of light rich soil (covering the seeds with a little sandy peat), in the open border, but not fully exposed to the mid-day sun; the plants will be fit to pot in the autumn (September), and should be kept in a cold pit all the winter: they should be planted out where they are to remain about the middle of April." As this is one of the species which flower so freely as to exhaust themselves, it seldom lasts above two or three years; unless about half the flower-buds are pinched off as soon as they appear.

22.—PENTSTEMON MURRAYANUS, *Hook.* MR. MURRAY'S PENTSTEMON.

ENGRAVINGS.—Bot. Mag., t. 3472; and our *fig. 1*, in Pl. 87.

SPECIFIC CHARACTER.—Very tall; extremely smooth, glaucous; leaves entire, oblong; lower ones spatulate; upper ones or bracts

connately perfoliate; flowers racemose; corolla perfectly smooth; tube subcylindrical, longer than the stamens; sterile filament perfectly naked.

DESCRIPTION, &c.—This plant has been called stately from the habit of its growth. The stem grows from three to five feet high, bearing a paniced raceme of very showy flowers, which are sometimes so numerous, that Sir William Hooker says he counted 56 blossoms on one raceme. This species is a native of Texas, whence it was introduced in 1835; and it proves quite hardy in British gardens, where it only requires to be planted in beds, or borders, in any common garden soil.

23.—PENTSTEMON ARGUTUS, *Pav.* THE CUT-LEAVED PENTSTEMON.

ENGRAVINGS.—Pant. Mag., of Bot., Vol. VI., p. 271; and our *fig. 2*, in Pl. 87.

pubescence; stems numerous, much branched towards the base. Leaves partly connate, deeply serrated; upper ones obovate or lanceolate; lower ones spatulate.

DESCRIPTION, &c.—This species is also a native of Texas, and bears considerable resemblance to the last, except that its stem is slightly pubescent, and its leaves are deeply serrated: If planted in the open border, the stem should be cut down to within a few inches of the ground in autumn, and the bed should have a slight

mulching of dead leaves, or the bark from an old pine pit, during the winter. Both this species and *P. Murrayanus* may be propagated either by seeds or by cuttings. *P. argutus* was introduced about 1836.

SECTION II.—*Anthers ciliated or downy.*

24.—PENTSTEMON GLABRUM, *Pursh.* THE GLABROUS PENTSTEMON.

SYNONYME.—*P. erianthera, Nutt.*

ENGRAVING.—*Bot. Mag.*, t. 1672.

SPECIFIC CHARACTER.—Very smooth; leaves sessile, ovate-lanceolate, entire, having the margins partly undulated; peduncles many-

flowered, secund; segments of calyx roundish-oval, acuminate; corolla sub-campanulate; sterile filament slightly bearded under the retuse apex; anthers pubescent. (*G. Don.*)

DESCRIPTION, &c.—This is a very singular-looking plant, with the flowers crowded together in the same manner as in *Chelone*. The flowers are very large, and of a deep purple. The species is quite hardy, and it is a native of Louisiana, in North America, whence it was introduced in 1811. It grows about a foot or a foot and a half high, and flowers in June and July.

25.—PENTSTEMON GLANDULOSUM, *Dougl.* THE GLANDULAR PENTSTEMON.

ENGRAVING.—*Bot. Reg.*, t. 1262.

SPECIFIC CHARACTER.—Plant clothed with a glandular pubescence; radical leaves ovate, coarsely toothed; cauline ones stem-clasping;

acute, almost quite entire; peduncles many-flowered; calyx loose, with ovate segments; corolla ventricose; anthers ciliated; sterile filament glabrous. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of North America, where it was found by Douglas on the banks of a river in the Rocky Mountains, 6,300 feet above the level of the sea. It was introduced in 1827, and is quite hardy in British gardens; where it may be propagated either by its seeds or by division of its roots.

26.—PENTSTEMON VENUSTUM, *Dougl.* THE GRACEFUL PENTSTEMON.

ENGRAVING.—*Bot. Reg.*, t. 1309.

SPECIFIC CHARACTER.—Stem suffruticose, erect, glabrous; leaves sessile, ovate-lanceolate, acuminate, denticulated, glabrous; peduncles

many-flowered, the whole forming a panicle; calyx glabrous; corolla ventricose, ciliated; anthers pilose; sterile filament bearded at top. (*G. Don.*)

DESCRIPTION, &c.—This is a very handsome species, with flowers as large as those of the Foxglove, but disposed in a most graceful panicle. It may be propagated either by seeds or by cuttings; but the latter is the best mode, as the plants vary a good deal from seed. It is a native of North-West America, where Douglas found it in the dry channels of rivers, among the mountains. It was introduced in 1827.

27.—PENTSTEMON RICHARDSONII, *Dougl.* DR. RICHARDSON'S PENTSTEMON.

ENGRAVINGS.—*Bot. Reg.*, t. 1121; *Bot. Mag.*, t. 3391.

SPECIFIC CHARACTER.—Herbaceous; leaves sessile, pinnatifid; peduncles few-flowered; calyx clothed with glandular pubescence,

with ovate-acute segments; corolla ventricose; anthers ciliated; sterile filament bearded, with a few hairs at the apex. (*G. Don.*)

DESCRIPTION, &c.—This was one of the earliest species found by Douglas, and it was named by him in compliment to Dr. Richardson, the celebrated companion of Captain Franklin, in the overland expedition undertaken to discover the North-West passage. It is quite hardy in British gardens, and was introduced in 1825.



1. *Penstemon Murrayana*. — 2. *Penstemon argutus*. — 3. *Penstemon Cobaea*?

28.—PENTSTEMON HETEROPHYLLUM, *Lindl.* THE VARIABLE-LEAVED PENTSTEMON.

ENGRAVINGS.—Bot. Reg., t. 1899; and our fig. 4, in Pl. 88.

SPECIFIC CHARACTER.—Leaves glaucescent, quite entire; lower ones linear-lanceolate; superior ones linear; raceme twiggy; sepals ovate, acuminate; corolla ventricose, beardless; sterile stamen glabrous; anthers sagittate, fringed at top.—(*G. Don.*)

DESCRIPTION, &c.—The stems of this species are woody at the base, and yet so slender, that if not supported artificially, they fall on the ground, and throw out a great number of side shoots. The colour of the flowers is of a reddish purple when expanded, and of a dull yellow when in the bud. The species is quite hardy, and it is a native of California, whence it was introduced in 1834.

29.—PENTSTEMON SCOULERI, *Dougl.* DR. SCOULER'S PENTSTEMON.

ENGRAVINGS.—Bot. Reg., t. 1277; and our fig. 3, in Pl. 85.

SPECIFIC CHARACTER.—Plant suffruticose at the base. Leaves obovate-lanceolate, serrulate; upper ones entire, obtuse. Flowers racemose; corolla ventricose; segments serrulate; anthers woolly.

DESCRIPTION, &c.—This species is a native of the Kettle Falls of the Columbia, where it was found by Douglas, and sent home by him in 1827. In its native country it is a shrub, but in England it is herbaceous, the stem becoming slightly woody at the base. It is propagated either by seeds or by cuttings.

SECTION III.—*Sterile filament glabrous; anthers glabrous; leaves narrow, entire, glaucous; flowers panicled.*30.—PENTSTEMON BARBATUM, *Nutt.* THE BEARDED PENTSTEMON.SYNONYMS.—*Chelone barbata*, *Cav.*; *C. formosa*, *Wend.*; *C. ruellioides*, *Andr.*ENGRAVINGS.—Bot. Reg., t. 116; Bot. Rep., t. 34; and our fig. 5, in Pl. 88, under the name of *Chelone barbata*; and of the variety *carneum*, Bot. Reg. for 1839, t. 21.

SPECIFIC CHARACTER.—Glaucous; leaves entire, radical ones spatulate, petiolate, acute; stem leaves sessile, lanceolate. Flowers pendulous, paniculate; lower lip of the corolla bearded, revolute, three-parted.

DESCRIPTION, &c.—This species and its variety are both natives of Mexico. The species was introduced in 1794, by Sir Joseph Banks, and it was for many years, under the name of *Chelone barbata*, a very favourite plant in flower-gardens. The variety, which is of a pale flesh-colour, was introduced in 1838; but it is very inferior in beauty to the species. Both are readily increased by cuttings, or by seeds; though the latter, even if sown as soon as ripe, will not vegetate before spring. Though both plants are called quite hardy, it is sometimes necessary to protect them during the winter, as they never die quite to the ground, and the lower part of the stem is liable to be injured either by hard frost, or a long continuance of wet. Most flower-gardeners, however, make cuttings every year in the autumn, which they preserve during the winter in pots.

31.—PENTSTEMON CENTRANTHIFOLIUS, *Dec.* THE VALERIAN-LEAVED PENTSTEMON.SYNONYM.—*Chelone Centranthifolia*, *Benth.*

ENGRAVING.—Bot. Reg., t. 1737.

SPECIFIC CHARACTER.—Very smooth, glaucous; leaves ovate-lanceo-

late, entire; cordate and stem-clasping at the base; panicle elongated, corolla tubular, pendulous, very smooth, naked at the mouth; sterile filament not bearded.

DESCRIPTION, &c.—This species is nearly related to the last, but it differs from it in the mouth of the corolla being destitute of a beard, and the leaves being of a different shape. It is a native of California, whence it was introduced in 1832; and it is quite hardy in British gardens.

OTHER SPECIES OF PENTSTEMON.

P. MACKAYANUS, *Flor. Cab.*, vol. II., t. 117.

This is a very pretty species, which is said to be a native of Ohio, where it was discovered by Mr. Drummond in 1834. It is a very small and delicate plant, with purple flowers, which are white inside, and have the beard of the sterile filament of a bright yellow. It is quite hardy, and is easily increased by dividing the roots.

P. CRASSIFOLIUS, *Lindl.*, *Bot. Reg.* for 1838, t. 16.

This is a very handsome species, with a suffruticose stem, and fleshy leaves. It grows about a foot high, and requires the same treatment as *P. Scouleri*. It is remarkable for the great number of shoots sent up by the roots, and consequently it is very easily propagated. It is a native of California, and it was introduced about 1835.

P. BREVIFLORUS, *Lindl.*, *Bot. Reg.*, t. 1946.

This is a curious little plant, with small flowers, which are white; striped with pink, and tinted with yellow, so as to present a very singular and harlequin-like appearance. It was introduced from California by Douglas, in 1833; but it is so difficult to manage that it is very seldom seen in British gardens, and is now probably lost.

There are some species of Pentstemons mentioned in catalogues, but very little is known respecting them.

GENUS VI.

CHELONE, *Lin.* THE CHELONE.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

GENERIC CHARACTER.—Calyx five-parted, tribracteate; corolla ringent, ventricose; upper lip emarginate; lower one trifid, sterile; stamens didynamous, with a sterile filament, which is shorter than the rest; anthers woolly; capsule two-celled, two-valved; seeds surrounded by a membranous margin (*G. Don*).

DESCRIPTION, &c.—Chelone is very nearly allied to Pentstemon; and, in fact, many botanical writers seem to have great difficulty in distinguishing between these two genera. Some authors make the difference consist in Chelone having woolly anthers, and Pentstemon smooth ones; while others distinguish the genera by the form of the flower; Chelone having a short inflated corolla, which is contracted at the orifice, while in Pentstemon the corolla is funnel-shaped or tubular, with an open mouth. The seeds of Chelone are also winged, that is, surrounded by a thin membrane; while those of Pentstemon are perfectly smooth. Without troubling my readers, however, with these minute distinctions, I need only tell them that modern botanists place but four species in the genus Chelone, and that these four are:—*C. glabra*, *C. obliqua*, *C. nemorosa*, and *C. Lyoni*; the last being sometimes called *C. major*. All these species are easily distinguished at first sight from the Pentstemons, from the manner in which the flowers are crowded together in a close spike; and from the shape of the flowers themselves, each being short and thick, with the upper lip curved, so as to bear some resemblance to the arched back of a tortoise; whence, indeed, the genus takes its name, the word Chelone being the scientific name of the tortoise.

1.—CHELONE GLABRA, *Lin.* THE SMOOTH CHELONE.

SPECIFIC CHARACTER.—Leaves lanceolate-oblong, acuminate, nearly sessile, glabrous.

DESCRIPTION, &c.—This species has white flowers, and is a native of the United States. It was introduced in 1730, but it is not often seen in British gardens, as it is very inferior in beauty to most of the other kinds. It is quite hardy, and is propagated either by seeds, or by dividing its roots.

2.—CHELONE OBLIQUA, *Lin.* THE OBLIQUE CHELONE.SYNONYMS.—*C. glabra*, var. *Michx.*; *C. purpurea*, *Mill.*; *Digitalis Mariana*, *Pluk.*; purple Chelone.ENGRAVING.—*Bot. Reg.*, t. 175.

SPECIFIC CHARACTER.—Leaves petiolate, ovate-lanceolate, unequally serrated, opposite, very smooth; flowers forming a dense spike.

DESCRIPTION, &c.—The flowers of this species are crimson, instead of purple; or, as the original discoverer of the species expresses it, they are of the colour of the Damask Rose. This original discoverer, whose name was Clayton, found the species in Virginia and Carolina, growing on the sides of rivulets in the mountainous districts of those countries, and sent it to the celebrated Miller in the year 1752. It has a creeping root, and grows freely in damp, shady situations. It is quite hardy, and it is propagated by dividing the roots.

3.—CHELONE MEMOROSA, *Dougl.* THE GROVE CHELONE.ENGRAVING.—*Bot. Reg.*, t. 1211.

SPECIFIC CHARACTER.—Leaves ovate, acuminate, serrated; upper

ones stem-clasping, cordate; peduncles naked, three-flowered, pubescent.

DESCRIPTION, &c.—This species, though generally classed with Chelone by modern botanists, is very unlike all the other species of the genus, as the flowers are disposed in a loose panicle and are open at the mouth. The seeds, however, have a margin. Dr. Lindley, speaking of this plant, says, "There is no genus to which this plant can be referred with more propriety than to Chelone; but it is by no means a genuine species of that genus. In habit it is intermediate between *Pentstemon* and *Chelone*, and its structure is not exactly that of either." The species is a native of California, whence it was introduced in 1827; and, like all the Californian plants, it is quite hardy, though it is easily killed by too much exposure to the sun.

4.—CHELONE LYONI, *Pursh.* MR. LYON'S CHELONE.SYNONYME.—*C. major*, *Sims.*ENGRAVINGS.—*Bot. Mag.*, t. 1864; Sweet's *Brit. Flow. Gard.*, t. 293; and our *fig. 6*, in *Pl. 88*.

SPECIFIC CHARACTER.—Erect, slightly branched; leaves petiolate,

cordate-ovate, acuminate, serrated, rugose, slightly ciliated at the margin; flowers in a terminal spike; sterile filament very short, hairy at the base.

DESCRIPTION, &c.—Though the figure of *Chelone Lyoni* in *Sweet* is said to be the same as *Chelone major*, figured in *Bot. Mag.*, they are, in fact, quite different. The plant figured in the *Bot. Mag.* is apparently only a variety of *C. obliqua*, from which it differs principally in being of larger size. The *C. Lyoni* of *Sweet*, on the contrary, is quite different, not only in the colour and disposition of the flowers, but in both the leaves and plants having a slight clothing of hair. *C. Lyoni* is a native of Upper Carolina and Georgia, whence it was introduced in 1812. It is quite hardy in British gardens, where it is increased by dividing the roots, or by seeds.

CHAPTER XL.

LABIATÆ.

CHARACTER OF THE ORDER.—Calyx tubular, regular, five-cleft, or five-ten-toothed, or bilabiate; lips entire or divided. Corolla tubular, irregular, bilabiate; superior lip undivided or bifid, lying over each other in aestivation; lower lip trifid. Stamens four, didynamous, two of which are sometimes sterile; filaments inserted under the sinuses of the lower lip and interlabiate; anthers two-lobed, lobes usually divaricate; but sometimes dimidiate, and therefore somewhat one-

celled, with an obsolete division, and a continuous suture. Ovaria four, one-seeded, connected with the base of the style, seated on a glandular disk, and girded at bottom; ovula erect. Style one. Stigma bifid, usually acute, sometimes unequal, or dilated. Achenia four, hidden by the permanent calyx, some of them generally abortive. Albumen wanting, or very sparing. Embryo erect. Cotyledons flat. (*G. Don.*)

DESCRIPTION, &c.—The plants belonging to this order are so clearly marked by their flowers, as to be easily recognised, though some are extremely ornamental, and others are totally without beauty. Nearly all the species are herbaceous: the Lavender, Thyme, and other plants belonging to the order, which are generally considered as shrubs, having very little pretension to that character, excepting to the eye of a botanist. Though the flowers of many of the genera may be considered as pretty, very few of them are sufficiently ornamental to be cultivated in gardens. The name of Labiatae alludes to the shape of the flowers, in which the lips form a conspicuous feature.

GENUS I.

SALVIA, *Lin.* THE SAGE.

Lin. Syst. DIANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx ovate, tubular, or campanulate, bilabiate; upper lip entire or tridentate; lower one bifid; throat naked inside. Corolla with an inclosed or exserted tube, which is equal, ventricose, or widened, sometimes furnished with a ring of hairs inside, sometimes naked, or sometimes furnished with two teeth or processes on the lower side at the base; limb bilabiate; upper lip erect, rarely spreading, straight or falcate, entire or emarginate; lower lip spreading, shorter or longer, with the lateral lobes oblong or roundish, spreading, reflexed, or twisted erectly, the middle lobe usually the broadest, entire or emarginate. Rudiments of superior stamens wanting, or small and club-shaped; lower two always fertile, inserted near the throat of the tube; filaments short, horizontal, rarely erect, articulated with the anther at top, and usually drawn out beneath the articulation, rarely almost con-

tinuous. Anthers dimidiate; connective, elongated, linear, articulated transversely with the filament ascending under the upper lip of the corolla, and bearing at the top a linear, adnate, or versatile fertile cell, and deflexed or erect behind, and sometimes bearing another smaller cell, which is either fertile or difformed, and empty; free, but usually combined together, or connate in various ways. Disk of ovary glanduliferous in front. Style ascending, bifid at top; lobes sometimes subulate, equal, or the superior one is longest, and sometimes the lower one or both are rounded, dilated, and flattened. Stigmas for the most part minute, terminal, or in the larger part running along the lobes of the style. Achenia ovoid-triquetrous, dry, glabrous, usually very smooth. (*G. Don.*)

DESCRIPTION, &c.—The common sage is a plant well known in every garden, from the use made of it in cookery. It is not, however, at all ornamental, as its leaves are rugose, and of a dingy green, while its flowers are not very conspicuous. It was formerly much esteemed for its medicinal properties, and our ancestors had a saying, "Why should a man die who has sage in his garden?" The name of *Salvia* is also derived from a Latin verb, signifying to save. There are numerous species in the genus, most of which are slightly shrubby at the base, and many of which have very handsome flowers.

I.—SALVIA NUBICOLA, *Wall.* THE SALVIA OF THE CLOUDS.

ENGRAVING.—Sweet's Brit. Flow. Gard., t. 140.

SPECIFIC CHARACTER.—Stem erect, quadrangular, branched in the upper part; leaves petiolate, somewhat halbert-shaped, oblong, acute,

crenate, subcordate, rugose, reticulately veined; flowers verticillate, in long racemes; bracts ovate, reflexed, glutinously hairy.

DESCRIPTION, &c.—This species is found in the mountains of Nepal, in situations so elevated as to give a reason for the somewhat poetical name—bestowed upon the species by Dr. Wallich—of *Salvia nubicola*, or the

Salvia of the Clouds. It grows about three feet high, with a square purplish stem, and rather small flowers, which are yellow, spotted with red. The leaves are rough, like those of the common sage. It was introduced in 1823. It is scarcely worth cultivating in gardens, as it is more curious than beautiful.

2.—*SALVIA FORSKOHLI*, *Lin.* FORSKOHL'S SAGE.

SYNONYMS.—*Salvia bifida*, *Forsk.*; *Scalaria orientalis*, *Tourn.*

ENGRAVING.—*Bot. Mag.*, t. 988.

SPECIFIC CHARACTER.—Leaves lirate-auriculate; stem nearly leafless; corolla decidedly helmet-shaped, with the helmet bifid.

DESCRIPTION, &c.—This is a very curious plant, from the very singular shape both of the flowers and leaves. The flowers are blue, striped with white, and the leaves nearly all spring from the root. The species is a native of Greece, whence it was introduced in the year 1800.

3.—*SALVIA INDICA*, *Lin.* THE INDIAN SAGE.

SYNONYMS.—*Horminum hirsutum*, *Moris.*; *Scalaria indica*, *Tourn.*

ENGRAVING.—*Bot. Mag.*, t. 395.

SPECIFIC CHARACTER.—Leaves cordate, sub-lobed; flowers verticillate, distant.

DESCRIPTION, &c.—This plant, though a native of India, is quite hardy in the open border in British gardens, where it grows to the height of four or five feet, and produces an abundance of its large purple flowers in the months of June and July. It is propagated by dividing the roots. It was introduced in 1731.

4.—*SALVIA CANESCENS*, *Meyer.* THE HOARY SAGE.

ENGRAVING.—*Bot. Reg.* for 1838, t. 36.

SPECIFIC CHARACTER.—Stems woolly at the base; leaves lanceolate-oblong, entire or sinuately lobed, narrowed a long way at the base, wrinkled, loosely clothed above, but densely beneath with white wool; floral leaves very broad, acuminate, concave, permanent,

rather shorter than the calyxes; racemes branched, clothed with clammy villi; whorls remote; calyx tubularly campanulate; teeth of lower lip lanceolate, acuminate; corolla about three times longer than the calyx, the tube a little exserted. (*G. Don.*)

DESCRIPTION, &c.—This species is a native of Mount Caucasus, where it is found growing among rocks. The leaves are covered with wool; but the flower-stems and calyxes are covered with a glutinous green hair, which forms a striking contrast to the whiteness of the leaves. The plant grows to a considerable height, and the stem, though slender, is very much branched at the top. The flowers are rather small, and of a dark purple. The species was introduced in 1837.

5.—*SALVIA BICOLOR*, *Willd.* THE TWO-COLOURED SAGE.

SYNONYM.—*S. crassifolia*, *Cav.*

ENGRAVINGS.—*Bot. Mag.*, t. 1774; and *Pact. Mag. of Bot.*, vol. ix., p. 271.

SPECIFIC CHARACTER.—Stem erect, a little branched, clothed with clammy pubescence; lower leaves petiolate, ample, ovate, deeply-toothed, pinnatifid, or palmately-lobed; middle leaves petiolate, ovate-lanceolate, acuminate, deeply-toothed; superior leaves sessile,

lanceolate, all cordate at the base, and clothed with clammy pubescence; floral leaves ovate-lanceolate, acuminate, reflexed; racemes a little branched, elongated; whorls distant, six-flowered; calyxes pedicellate, campanulate, striated, clothed with clammy hispid hairs; teeth all subulate; corolla three times longer than the calyx; the tube equaling the calyx; stamens exserted. (*G. Don.*)

DESCRIPTION, &c.—This is a remarkably strong-growing and handsome species; but, unfortunately, the beauty of its showy flowers is but short-lived, as the snowy whiteness of the lower lip of the corolla very soon fades, and changes to a dingy brown. The species is a native of Barbary, where it was first discovered by Desfontaines; and it proves a hardy biennial in British gardens. The stem is quadrangular, and the leaves large and fleshy. It flowers during the whole of the summer months, and ripens abundance of seeds. It was introduced in 1793.

6.—*SALVIA AUSTRIACA*, Jacq. THE AUSTRIAN SAGE.

SYNONYMS.—*S. sclarea*, *Crantz.*; *S. distans*, *Pohl.*; *Sclarea distans*, *Monch.*

ENGRAVING.—*Bot. Reg.*, t. 1019.

SPECIFIC CHARACTER.—Stem erect, nearly naked, pubescent; radical leaves petiolate, broad-ovate, crosely toothed, cordate, rounded or cuneate at the base, wrinkled, glabrous above and pubescent beneath;

cauline leaves few; floral leaves ovate, acuminate, ciliated, about equal in length to the calyxes; racemes a little branched; whorls about six-flowered; lower ones distant; upper ones approximate; calyxes nearly sessile, campanulate, very pilose; corolla three times as long as the calyx; the tube a little exerted. (*G. Don.*)

DESCRIPTION, &c.—This is a very coarse-growing plant, with a strong, disagreeable smell; and, consequently, it is scarcely worth growing, except for the singularity of its flowers, which are of a pale yellow, covered with dark purple hairs. It is a native of Austria, whence it was introduced in 1776; but it is very seldom seen in British gardens. It is useful, however, in all situations where a rapid-growing plant, with large leaves, is wanted to fill up a space.

7.—*SALVIA TENORII*, Spreng. PROFESSOR TENORE'S SAGE.

SYNONYMS.—*S. Barbellieri*, *Ten.*; *S. dumetorium*, *Fisch.*

ENGRAVING.—Sweet's *Brit. Flow. Gard.*, t. 26.

SPECIFIC CHARACTER.—Leaves oblong, sub-sinuated, unequally

crenated, rough, reticulately veined; upper ones stem-clasping, acute; lower ones petiolate; flowers verticillate, nearly naked; helmet of the corolla hairy, falcate; calyx furrowed.

DESCRIPTION, &c.—The flowers are large, and of a dark blue, tinged with purple. They grow in whorls of about six each, without any leaves on the flower-stems, and with scarcely any bracts. The species is a native of Europe, and it was introduced in 1820, when it was raised from seeds received from Italy. A few years afterwards the same species was raised from seeds received from Russia. It is quite hardy in British gardens, and the seeds ripen freely.

8.—*SALVIA NUTANS*, Lin. THE NODDING SAGE.

SYNONYMS.—*S. acutifolia*, *Lam.*; *S. pendula*, *Besser.*; *S. hastata*, *Ettling*; *S. betonicaefolia*, *Bieb.*

ENGRAVING.—*Bot. Mag.*, t. 2436.

SPECIFIC CHARACTER.—Stem pubescent, nearly naked; leaves all radical, or nearly so, on long petioles, ovate-oblong, doubly crenated,

sub-cordate at the base, wrinkled; floral leaves orbicular; racemes short, on long peduncles, panicle, drooping at the time of flowering; whorls about six-flowered, approximate; calyxes reflexed, pubescent; corolla twice as long as the calyx, the tube equalling the calyx. (*G. Don.*)

DESCRIPTION, &c.—This is a very singular plant; the flowers, which are of a very dark purple, are small, and so unlike those of any other kind of Sage, as to give no idea of the plant belonging to the genus. The leaves are cordate, undulated, and bordered with a pinkish membrane at the margin. The veins are also pink. The species is a native of Russia, and various parts of the Continent, and it was introduced in 1780. It is quite hardy, and may be propagated either by seeds or by dividing its roots.

9.—*SALVIA ANGUSTIFOLIA*, Cav. THE NARROW-LEAVED SAGE.

SYNONYMS.—*S. reptans*, *Jacq.*; *S. virgata*, *Ort.*

ENGRAVINGS.—*Bot. Reg.*, t. 1254; and our *fig. 4*, in Pl. 89.

SPECIFIC CHARACTER.—Stems herbaceous, erect, glabrous, or beset with spreading hairs; leaves nearly sessile, oblong-linear, narrowed at both ends, quite entire, or serrated, glabrous; floral leaves bractea-formed, linear-lanceolate, deciduous; racemes elongated, simple;

whorls all distant, two-six-flowered; calyx tubular, striated, hispid, with the upper lip entire, and the teeth of the lower lip ovate, acute; corolla twice as long as the calyx; tube equalling the calyx; middle lobe of lower lip emarginately bilid; style bifurciously bearded. (*G. Don.*)

DESCRIPTION, &c.—This is a very pretty species, which continues flowering all the summer; but it requires to be protected from frost during winter. As it strikes easily from cuttings, the best way of treating it is to plant it out in the open border in May, and then to make cuttings of it in the autumn, which may be preserved



1. *Salvia fulgens* 2. *Salvia patens* 3. *Salvia Grahamii* 4. *Salvia angustifolia*?

in a frame or pit during the winter months, for planting out the following spring. It is a native of Mexico, where it grows in dry elevated places, and whence it was introduced, according to some botanical writers, in 1806; but, if this was the case, it must have been lost, as it was re-introduced about 1830.

10.—*SALVIA AZUREA*, Pursh. THE AZURE-FLOWERED SAGE.

SYNONYMS.—*S. acuminatissima*, Vent.; *S. angustifolia*, Michx.;
S. Mexicana, Walt.; *S. longifolia*, Nutt.
 ENGRAVING.—Bot. Mag., t. 1728.

SPECIFIC CHARACTER.—Leaves linear-lanceolate, serrated, and, as well as the stem, glabrous. Calyx pubescent, very short, trifid.

DESCRIPTION, &c.—This is probably only a variety, or, perhaps, merely a variation, of *S. angustifolia*, which it resembles closely, except that the flowers are rather smaller, and the leaves somewhat broader than in that species. It is also stated to be a native of Carolina instead of Mexico. It was introduced in 1806. There is another species, a native of Mexico, called *S. amarissima*, which is evidently very nearly allied to the preceding species, though the flowers are still smaller, and the leaves still broader.

11.—*SALVIA REGLA*, Cav. THE REGLA SAGE.

SYNONYME.—*S. deltoidea*, Pers.

ENGRAVING.—Bot. Reg. for 1841, t. 14.

SPECIFIC CHARACTER.—Stem shrubby at the base. Leaves petio-

late, rotund, obtuse, sinuately crenate. Flowers in small, terminal panicles.

DESCRIPTION, &c.—This species, though said by its discoverer, Mr. Hartweg, to form a shrub four or five feet high in its native country, Mexico, appears to be only an herbaceous plant in Britain. Its flowers are of the most brilliant scarlet, but unfortunately only a very few open at a time. It was introduced in 1840.

12.—*SALVIA INVOLUCRATA*, Cav. THE INVOLUCRATED SAGE.

SYNONYME.—*S. levigata*, Hum. et Kim.

ENGRAVINGS.—Bot. Mag., t. 2872; and Bot. Reg., t. 1205.

SPECIFIC CHARACTER.—Smooth. Leaves cordate-ovate, acuminate.

Flowers in terminal panicles; bracts very large, and united, so as to form a kind of involucre to each flower. Corolla tubular, ventricose, much longer than the calyx.

DESCRIPTION, &c.—This is a most noble plant, the stem frequently growing six or eight feet high, and the flowers being large, and of a most beautiful rose-colour. The species is a native of Mexico, from which country it was introduced about 1825. It grows freely in the open air, but requires a slight protection during winter. It is propagated by cuttings.

13.—*SALVIA GRAHAMI*, Benth. MR. GRAHAM'S SAGE.

ENGRAVINGS.—Bot. Reg., t. 1370; and our fig. 3, in Pl. 89.

SPECIFIC CHARACTER.—Stem suffrutescent, branched, slightly pubescent. Leaves ovate, slightly crenated, wedge-shaped, or rounded at

the base, very slightly pubescent. Racemes elongated, not branched; calyx tubular, covered with glandular hairs; corolla twice as long as the calyx.

DESCRIPTION, &c.—This is a very pretty species, growing about three feet high, and covered with an abundance of deep rose-coloured flowers. The stems are angular, and have the peculiarity of having more down on two of the sides, than on the other two. The flowers begin to appear in June, and continue to be produced in great abundance till October, and sometimes even till November. The species is a native of Mexico, where it was found by Mr. Graham, and introduced by him in 1829; and it has very appropriately been named after that gentleman. It is generally propagated by cuttings, which are struck in autumn, and kept in a cold pit or

greenhouse during the winter, to be planted in the open border in May. It may, however, be kept in the open ground the whole of the year, if it is protected from the frost. The following peculiarity respecting this plant is mentioned in the *Botanical Register*:—"The upper and under surfaces of the leaf of this species abound with spherical particles of concrete oily matter lying in depressions of the surface. The only remarkable circumstance that we have observed connected with them is, that each spherule, when placed in water and slightly bruised, discharges an inconceivable quantity of active molecules."

14.—*SALVIA FULGENS*, Cav. THE BRILLIANT-FLOWERED SAGE.

SYNONYME.—*S. cardinalis*, Hum. et Bonpl.

ENGRAVINGS.—Sweet's Brit. Flow. Gard., 2nd ser., t. 59; and our fig. 1, in Pl. 89.

SPECIFIC CHARACTER.—Leaves cordate-ovate, crenate, woolly below. Flowers verticillate; bracteas ovate, long, acuminate; calyx trifid; helmet of the corolla hairy.

DESCRIPTION, &c.—The stem of this plant grows three or four feet high, and frequently more, dividing into numerous branches near the top. The stem is shrubby at the base, and the branches are thickly covered with white hairs, that are more or less bent at the points. The leaves are rugose, and hairy on both sides; but the hairs on the under side are so dense as to make the leaves appear white below. This superb species of *Salvia* is a native of Mexico, where it was found at an altitude of about 9000 feet above the level of the sea. It should be planted in the open border in a very rich soil, where it will grow luxuriantly, and flower nearly all the summer. It requires a slight protection during frosty weather, and it is propagated by cuttings, which should be kept in a cold frame or greenhouse during winter, and planted out in spring. It was introduced in 1827.

15.—*SALVIA PATENS*, Cav. THE SPREADING SAGE.

SYNONYMS.—*S. spectabilis*, H. B. et K.; large blue Mexican Sage.

ENGRAVINGS.—Bot. Mag., t. 3808; Bot. Reg. for 1839, t. 23; Paxt. Mag. of Bot., vol. vi., p. 1; and our fig. 2, in Pl. 89.

SPECIFIC CHARACTER.—Roots tuberous; leaves cordate or hastate, hairy above and pubescent below; flowers verticillate, in remote whorls; helmet of the corolla falcate; lower lip three-lobed.

DESCRIPTION, &c.—The roots of this very handsome species are tuberous, and the flowers are very large and showy. Dry tubers of it were first sent to this country, from Mexico, in the year 1838. The stems are somewhat shrubby at the base, and grow to a considerable height in rich soil. The flowers are of a most brilliant blue, and very handsome; but, unfortunately, they fall off soon after expanding. The species is generally increased by cuttings, or by dividing its roots. It grows best in a sheltered situation, as it is liable to be broken by high winds, and it requires a very rich soil.

16.—*SALVIA CONFERTIFLORA*, Benth. THE CROWDED-FLOWERED SAGE.

ENGRAVINGS.—Bot. Reg. for 1839, t. 29; and Bot. Mag., t. 3899.

SPECIFIC CHARACTER.—Stem suffrutescent at the base, woolly; leaves petiolate, ovate-oblong, sharply serrated, rugose on the upper surface,

whitely tomentose below; flowers verticillate, in dense many-flowered whorls.

DESCRIPTION, &c.—This is a very singular plant; the flowers are small, but they are of so bright a colour, and so numerous, as to have a very splendid appearance. There is a very beautiful variety in the Glasgow Botanic Garden, the flowers of which are of a brighter colour than those of the species. This plant is a native of Brazil, whence it was introduced in 1834. It requires protection during winter.

OTHER SPECIES OF *SALVIA*.

There are many other species of *Salvia* which are very ornamental; but, as they seldom live many years in the open ground in British gardens, it has not been thought worth while to describe them all in detail; and it may be sufficient to say here, that all the Mexican species, which are suffruticose at the base, will live in the open garden if they are protected during winter. The large-flowered kinds thrive much better in the open ground than in a greenhouse; but those species which have small flowers do not do so well, as they flower late in the autumn when the weather is too cold to bring them to perfection in the open air.

GENUS II.

MONARDA, *Lin.* THE MONARDA.*Lin. Syst.* DIANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx tubular, elongated, 15-nerved; five-toothed. Corolla with a dilated throat, and a bilabiate limb; lips nearly equal; upper lip erect, lower lip spreading, generally trifid.

Stamens two, ascending, usually exerted from the upper lip of the corolla; anthers linear. Style bifid; stigmas very small. Seeds dry and smooth.

DESCRIPTION, &c.—The flowers of the species belonging to this genus are by no means remarkable for their beauty, and they generally consist of a few dense whorls, with large bracteas. They are also generally coarse-growing, and require a good deal of room in a garden. The name of *Monarda* was given in honour of Nicholas Monarda, a physician of Seville, in the sixteenth century.

1.—MONARDA DIDYMA, *Lin.* THE SCARLET MONARDA, OR OSWEGO TEA.

ENGRAVING.—*Bot. Mag.*, t. 546.

SPECIFIC CHARACTER.—Flowers with two filaments, as well as two

perfect stamens; stem acutely angular; leaves broadly lanceolate, deeply serrated, and glabrous.

DESCRIPTION, &c.—The flowers of this plant are of as brilliant a scarlet as those of *Verbena Melindres*; and the bracts and leaves frequently partake of the same hue. The plant grows about two feet high, and it is very bushy. The leaves, when bruised, give out a delightful fragrance. It is a native of North America, whence it was introduced in 1755, by the celebrated Peter Collinson. It prefers a moist soil, increasing rapidly by its numerous shoots; which are, indeed, so numerous as to make it very difficult to eradicate the plant from any situation where it has once established itself.

2.—MONARDA FISTULOSA, *Lin.* THE FISTULOUS MONARDA.

SYNONYMES.—*M. altissima*, *Willd.*; *M. rugosa*, *Ait.*; *M. affinis*, *Link.*; *M. clinopodia*, *Pursh.*; *M. oblongata*, *Hort.*; *M. Kalmiana*, *Max.*

ENGRAVING.—*Bot. Mag.*, t. 145.

SPECIFIC CHARACTER.—Flowers in one large terminal head; stem obtusely angular.

DESCRIPTION, &c.—This plant bears a strong family resemblance to the last, but the flowers are crimson instead of scarlet, and they are produced in one large terminal head, instead of being in several distinct whorls. The bracteas are also different. In other respects the plants are very similar; the leaves have the same fragrance, and the habit of growth is alike in both plants. The present species is a native of Canada, and was introduced in 1656.

3.—MONARDA MEDIA, Willd. THE PURPLE MONARDA.

ENGRAVING.—Sweet's Brit. Flow. Gard., t. 98.

SPECIFIC CHARACTER.—Stem obtusely angular, pubescent; leaves cordate-ovate, acuminate, sharply serrated, shining on the upper surface, and pubescent below. Flowers verticillate, in distant whorls;

bracts coloured, exterior ones ovate, acuminate, serrated; interior ones lanceolate-linear, entire; and lower lip of the corolla with the middle lobe bifid.

DESCRIPTION, &c.—This species only differs from the common Oswego Tea in the flowers being purple instead of scarlet, in the central lobe of the lower lip being cleft, and in the stem being obtusely angular, instead of sharply so. It is, also, not quite so large a plant. It is a native of North America, and it is supposed to have been brought to this country in 1812.

4.—MONARDA MOLLIS, Lin. THE SOFT MONARDA.

SYNONYMS.—*M. allophylla*, Michx.; *M. purpurea*, Pursh.; *M. undulata*, Reich.; *M. oblongata*, Ait.; *M. fistulosa*, var. *maculata*, Benth.

ENGRAVING.—Bot. Mag., t. 3310.

SPECIFIC CHARACTER.—Leaves petiolate, ovate-lanceolate, rounded or subcordate at the base. Flowers in a terminal head, recurved.

DESCRIPTION, &c.—This is a very elegant species, with flowers of a light purple, spotted with a much darker shade of the same colour. The species is a native of New Orleans, whence it was introduced in the year 1832. The stem grows two or three feet high; but it is much more slender and graceful than that of most of the other species of the genus. The flowers are few, but they are pretty and elegantly disposed.

5.—MONARDA RUSSELLIANA, Hook. THE DOTTED-FLOWERED MONARDA.

ENGRAVINGS.—Bot. Mag., t. 2513; and our fig. 4, in Pl. 90.

SPECIFIC CHARACTER.—Stem acutely angled, with two deep grooves; leaves ovate, acuminate, rounded at the base; lower ones serrated,

upper ones entire. Flowers capitate; lower lip of the corolla curled inwards.

DESCRIPTION, &c.—This very distinct species is a native of North America, whence it was introduced in 1823. It is quite hardy in British gardens, though it does not blossom till late in autumn.

OTHER SPECIES OF MONARDA.

M. ARISTATA, Nutt. Bot. Mag., t. 3526.

A very pretty species, with rose-coloured flowers in distinct whorls, and leaves which smell like lemon. It is a native of Mexico, and also, it is said, of the Southern States of North America, whence it was introduced in 1823; but it appears to have been since lost.

M. PUNCTATA, Lin. Bot. Reg., t. 87.

The flowers of this species are yellow, spotted with red, and the bracts are pink. The leaves smell like those of mint. It is a native of North America, whence it was introduced in 1714; but it appears to have been since lost.

There are several other names in catalogues, but they appear to be only synonyms of the plants already described. There is, indeed, a great confusion among the plants belonging to this genus, and some botanists make only two distinct species of the whole—viz., those with the flowers in terminal heads, and those with the flowers in several distinct whorls.



1 *Dracocephalum sibiricum*. — 2 *Dracocephalum Alaiense*. — 3 *Scutellaria Alpina*.
4 *Monarda Ruspeana*.

GENUS III.

SCUTELLARIA, *Lin.* THE SKULLCAP.*Lin. Syst.* DIDYNAMIA GYMNOSPERMIA.

GENERIC CHARACTER.—Calyx campanulate, bilabiate; lips entire, from the coalition of the sepals, closed, after the falling of the corollas, and at length cleft even to the base; superior lip furnished with a dilated scale at top, which is concave above, falling away at maturity; lower lip permanent. Tube of corolla much exerted, naked inside, straight or usually recurved; ascending beyond the calyx, dilated into the throat above; limb bilabiate; upper lip entire at apex, or emarginate; lower lip spreadingly dilated, convex, emarginate at apex; the lateral lobes sometimes free and spreading, but usually joined to the

upper lip, rarely to the lower lip. Stamens 4, ascending under the galea, didynamous; the two lower ones the longest. Anthers approximate by pairs, ciliated, those of the lower stamens dimidiate, and those of the superior stamens two-celled, cordate; cells sub-divaricate. Superior lobe of style very short; lower one stigmatiferous at top. Ovarium oblique, elevated upon the incurved gynophore. Achenia dry, naked, tubercled, glabrous or clothed with adpressed tomentum. (*G. Don.*)

DESCRIPTION, &c.—Nearly all the species belonging to this genus are perennials; generally with blue or yellow flowers, and with scarcely any bracteas. Most of the species are ornamental. The name *Scutellaria* signifies a little saucer, and has reference to the shape of the calyx.

1.—SCUTELLARIA GRANDIFLORA, *Sims.* THE LARGE-FLOWERED SKULLCAP.

ENGRAVING.—*Bot. Mag.*, t. 635.

SPECIFIC CHARACTER.—Leaves cordate, crenate, with long petioles.

Flowers in a very short spike; corolla hairy, four times longer than the calyx.

DESCRIPTION, &c.—This plant is a native of Siberia, and it is quite hardy in British gardens, where it is very suitable for rock-work, on account of its large pink and yellow flowers, its soft velvet-like leaves, and its dwarf stature. The flowers have no scent, and they, as well as the whole plant, are intensely bitter. It was introduced in 1804.

2.—SCUTELLARIA ALPINA, *Willd.* THE ALPINE SCUTELLARIA.

ENGRAVINGS.—Sweet's *Brit. Flow. Gard.*, t. 90; and our *fig. 3*, in Pl. 90.

SPECIFIC CHARACTER.—Leaves cordate, sharply serrated. Flower spike imbricated; flowers twice as long as the bracts.

DESCRIPTION, &c.—This very pretty plant is quite hardy in British gardens, where it continues producing a succession of blossoms all the summer. According to the description of it given in Sweet's *British Flower Garden*, "it seldom exceeds six or nine inches in height; but the branches spread round to a considerable distance, so that it is requisite to cut it back in winter, to keep it within bounds. It succeeds well in the common garden soil, and will grow in rather a shady situation, where many plants that are more tender will not thrive. It is readily increased by dividing at the root, or by seeds, which ripen plentifully." It is a native of Hungary, and other parts of the Continent, whence it was introduced in 1752. There are several varieties; one with dark red flowers, and another, the flowers of which are yellow.

OTHER SPECIES OF SCUTELLARIA.

S. ORIENTALIS, *Lin.*, *Bot. Mag.*, 2120.

This species is a native of Greece. It has pale-yellow flowers, and is not remarkable for its beauty; but it is quite hardy in British gardens. It was introduced in 1721.

S. ALTAICA, *Fisch.*; Sweet's Brit. Flow. Gard., t. 45.

The flowers of this species are purple, with a yellow lip. The species is frequently sold for *S. orientalis*, but it is much handsomer, and quite distinct. It bears a much greater resemblance to *S. alpina*, and like that species it continues to blossom all the summer. It is a native of the Altaian Mountains, whence it was introduced in 1816.

S. LUPULINA, *Dec.*; Bot. Reg., t. 1493.

This is merely the yellow-flowered variety of *S. alpina*.

S. PEREGRINA, *Sibth.*; Sweet's Brit. Flow. Gard., t. 52.

This is the same species as *S. columnæ*. The flowers are tubular, and of a dark purple, shaded off to white at the base. The species is a native of Italy, whence it was introduced in 1806.

GENUS IV.

DRACOCEPHALUM, *Lin.* THE DRAGON'S HEAD.

Lin. Syst. DIDYNAMIA GYMnosPERMIA.

GENERIC CHARACTER.—Calyx tubular, 13-15-nerved, straight, rarely incurved, with a straight or equally five-toothed mouth; upper tooth the broadest, usually large; the three upper teeth sometimes joined into an upper lip. Corolla with the tube slender at the base, inclosed, or more often exerted, with a very wide throat, and a bilabiate limb; upper lip erect, rather concave, emarginate; lower lip

spreading, trifid, the middle lobe large, and rather bifid. Stamens four, didynamous; lower ones the shortest, ascending. Anthers approximating by pairs, two-celled; cells divaricate. Style bifid at top, and divided into two nearly equal parts; lobes subulate, stigmatiferous at apex. Achenia dry, smooth, naked. (*G. Don.*)

DESCRIPTION, &c.—All the species belonging to this genus are perennial plants, with the flowers in whorls, and with large leafy bractæas. The flowers are generally large and very handsome. The name of *Dracocephalum*, which signifies, literally, a dragon's head, has reference to the shape of the corolla.

1.—DRACOCEPHALUM GRANDIFLORUM, *Lin.* THE LARGE-FLOWERED DRACOCEPHALUM.

SYNONYME.—*D. altaïense*, *Laxm.*; the Betony-leaved Dragon's-head.

ENGRAVINGS.—Bot. Mag., t. 1009; Sweet's Brit. Flow. Gard., 2d. ser., t. 57; and our *fig.* 2, Plate 90, under the name of *D. altaïense*.

SPECIFIC CHARACTER.—Flowers in whorls; bracts oblong, mucro-

nately dentate; segments of the calyx equal. Radical leaves petiolate, cordate-oblong, obtusely dentate; stem leaves sessile, nearly round, but attenuated at the base, deeply toothed, with large, bluntish teeth.

DESCRIPTION, &c.—This species grows in short tufts, and is well deserving of cultivation from the extraordinary beauty of its flowers. It will, however, only grow well in a light, dry soil, and where it can have plenty of sun and fresh air. In any situation that suits it, it will grow at once without any trouble; and, therefore, when it is found not to succeed the first time of planting, it is of no use trying it again. It is a native of the Altaian Mountains, whence it was introduced in 1759.

2.—DRACOCEPHALUM PEREGRINUM, *Lin.* THE PILGRIM'S DRACOCEPHALUM.

ENGRAVING.—Bot. Mag., t. 1084.

SPECIFIC CHARACTER.—Flowers sub-spicate; bracts linear-lanceolate, somewhat spiny. Leaves lanceolate, remote, mucronately dentate.

DESCRIPTION, &c.—This species is remarkable for its prickly leaves and bracts, and for its flowers being produced in pairs. It is a native of Siberia, whence it was introduced in 1758. It is quite hardy, and may be propagated either by seeds, or by dividing its roots.

3.—*DRACOCEPHALUM SPECIOSUM*, Swt. THE BEAUTIFUL *DRACOCEPHALUM*.SYNONYME.—*Physostegia speciosa*, Dec.

ENGRAVING.—Sweet's Brit. Flow. Gard., t. 93.

SPECIFIC CHARACTER.—Stem erect, obtusely quadrangular. Leaves lanceolate, sessile, sharply serrated.

DESCRIPTION, &c.—This very handsome species is the type of the new genus formed by Professor De Candolle, which is called *Physostegia*. The flowers are pinkish, and are disposed in regular panicles. Several stems grow from the same root to the height of three or four feet; and the plant is quite hardy. It should be grown in a light rich soil, and it is readily increased by dividing the root. The species is a native of North America; whence it was introduced in 1820.

4.—*DRACOCEPHALUM SIBERICUM*, Lin. THE SIBERIAN *DRACOCEPHALUM*.SYNONYMES.—*Nepeta macrantha*, Dec.; *Cataria montana*, Bux.

ENGRAVINGS.—Bot. Mag., t. 2185; and our fig. 1, in Plate 90.

SPECIFIC CHARACTER.—Flowers in whorls. Leaves lanceolate-cordate, acuminate, serrated, glabrous.

DESCRIPTION, &c.—This is a fine handsome plant, but with a very disagreeable smell, which has been compared, by some botanists, to rancid oil, and by others, to what is called stinking Horehound. The taste, when chewed, at first resembles that of peppermint, but it afterwards becomes bitter and nauseous. The species is a native of Siberia, whence it was introduced in 1760.

OTHER SPECIES OF *DRACOCEPHALUM*.D. *CORDATUM*, Nutt.

This species is a native of North America, whence it was introduced in 1824. It is now frequently called *Cedronella cordata*, from its habit of growth, which is spreading, and yet in distinct whorls, like a little Cedar.

D. *CANARIENSE*, Lin.

This plant is a native of the Canary Isles, whence it was introduced in 1697. Its common English name is, the Balm of Gilead, from its fragrance. De Candolle now calls it *Cedronella triphylla*.

D. *DENTICULATA*, Lin.

This species is now included in the genus *Physostegia*, together with several others nearly allied to it. They are all handsome plants with their flowers disposed in panicles, and well worthy of cultivation in every garden. Two other well-known species are now called *Physostegia imbricata*, and *P. virginiana*.

There are some other ornamental plants belonging to the order Labiatae; but they are generally either natives of Britain, or too coarse in their habit of growth to deserve a place in a lady's flower-garden.

CHAPTER XLI.

VERBENACEÆ.

CHARACTER OF THE ORDER.—Calyx tubular, persistent, inferior. Corolla hypogynous, monopetalous, tubular, deciduous, generally with an irregular limb. Stamens usually four, didynamous, seldom equal, occasionally two. Ovary two or four-celled; ovules erect or pendu-

lous, solitary or twin; style one; stigma bifid or undivided. Fruit nucamentaceous, sometimes berried, composed of two or four nucules in a state of adhesion. Seeds erect, or pendulous; albumen none, or in very small quantity; embryo always erect. (*Lindley*).

DESCRIPTION, &c.—The plants belonging to this order are generally trees and shrubs which require a hot-house in British gardens. The largest tree is the Teak tree, which is used in India for building ships. The

only ornamental herbaceous plants belonging to the order are those included in the genus *Verbena*; and even these are generally shrubby at the base, and require protection during the winter. I have, however, included the *Verbenas* in this work, as they flower perfectly well in the open ground during summer; and are so exceedingly ornamental, that no flower-garden is now considered complete without them.

GENUS I.

VERBENA, *Lin.* THE VERVAIN.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

GENERIC CHARACTER.—Calyx five-cleft; corolla funnel-shaped, enclosed, when young, in a thin shelled pericarpium, which bursts, limb unequal, five-cleft. Stamens four, didynamous. Seeds four, and leaves them naked when ripe. Flowers paniculate or spicate.

DESCRIPTION, &c.—The botanic name of *Verbena* is derived from the English name Vervain, which is slightly altered from the Celtic name of the plant, Ferfaen or Witch's herb, from its being supposed to possess extraordinary powers in medicine. It was also used in incantations; and a bit of it tied round the neck was supposed to prevent the bite of a serpent from doing any injury, and to cure any infectious disease.

1.—VERBENA PANICULATA. *Lam.* THE PANICLED VERBENA.

ENGRAVING.—Bot. Reg., t. 1102.

SPECIFIC CHARACTER.—Stem scabrous, ovate, lanceolate, acute,

unequally serrated; veins reticulated on the under side. Spikes filiform, and disposed in corymbose panicles. Flowers imbricated.

DESCRIPTION, &c.—This is not a handsome species, but it is a very curious one. It is a native of the high mountains of Virginia and Carolina, where it grows from 4 to 6 feet high. It was introduced in the year 1800, but it has never become common in British gardens, as it is more curious than beautiful.

2.—VERBENA STRICTA. *Vent.* THE UPRIGHT VERBENA.

SYNONYME.—*V. rigens, Michx.*

ENGRAVING.—Bot. Mag., t. 1976.

SPECIFIC CHARACTER.—The whole plant is covered with whitish

hairs. Spike cylindrical. Leaves subsessile, ovate, serrated. Stem erect, round.

DESCRIPTION, &c.—This species is very different from the plants usually known as *Verbenas* in our flower-gardens, as the flowers are arranged in an upright cylindrical spike, instead of being in heads or panicles. The flowers are purple, and the segments of the limb are much sharper and narrower than those of *Verbenas* generally. The species is a native of Carolina, whence it was introduced in 1802. It requires abundance of fresh air, and a light soil. In favourable situations, it will produce several flower-spikes.

3.—VERBENA AUBLETIA. *Lin.* THE ROSE VERVAIN.

SYNONYMES.—*V. Oblettia, Retz.*; *V. longiflora, Lam.*; *Oblettia vulgaris, Roz.*; *Glandularia carolinensis, Gmel.*; *Anonymos carolinensis, Walt.*; *Buchnera canadensis, Jacq.*; *Einus laciniatus, Willd.*; *Lychneidea Verbenae, Feuille.*

ENGRAVINGS.—Bot. Mag., t. 308; Bot. Reg., t. 294.

SPECIFIC CHARACTER.—Ascending. Leaves variously cut. Spike solitary, imbricated, many-flowered.

DESCRIPTION, &c.—This species was originally called the Rose Vervain, because its flowers formed a kind of cluster or rose. It is a native of North America, whence it was introduced by Monsieur Richard in 1774. It is generally considered a biennial, but it will live several years in the open ground, unless it happens to be killed by a severe frost. The flowers are purple, of various shades, some being almost red, and others nearly blue.



1. *Verbena blanda* — 2. *Verbena pinnatifida* — 3. *Verbena stricta*
4. *Verbena coriacea*

4.—VERBENA LAMBERTI, *Sims*. MR. LAMBERT'S VERBENA.SYNONYMS.—*V. bracteosa*, *Pursh*.ENGRAVING.—*Bot. Mag.*, t. 2200.

SPECIFIC CHARACTER.—Stem quadrangular, hispid. Spike lax, solitary. Leaves oblong, sharply toothed.

DESCRIPTION, &c.—This plant is most probably only a variety of *V. Aubletia*, to which it is evidently very nearly allied. There is, however, a great confusion between these two species, and one called *V. Drummondii* in the nurseries; particularly as two very different plants appear to be known by the latter name. One of these is figured in the second series of Sweet's *British Flower-Garden*, as a variety of *V. Lamberti*; but it is extremely unlike that species, and bears much more resemblance to *V. Teuroides*. The other, *V. Drummondii*, is figured in the *Botanical Register*, as a variety of *V. Aubletia*, and it has a small loose spike of flowers, which are of a pale purplish blue, and are delightfully fragrant. All these plants appear to be natives of North America, and they are all hardy in British gardens. They are propagated by cuttings. *V. Lamberti* is said to have been introduced in 1816; and *V. Drummondii* in 1836.

5.—VERBENA MELINDRES, *Gillies*. THE SCARLET BUENOS AYRES VERBENA.SYNONYMS.—*V. Chamædryfolia*, *Juss.*; *V. veronicifolia*, *Smith*; *Lychneidea veronicifolia*, *Feuill.*; *Erinus Peruvianus*, *Willd.*ENGRAVINGS.—*Bot. Reg.*, t. 1184; *Bot. Mag.* 3333; Sweet's *Brit. Flow. Gard.*, 2nd ser., t. 9; *The Botanist*, vol. 3, t. 127; and our *fig.* 1, in Pl. 91.

SPECIFIC CHARACTER.—Stem ascending, hispidly pilose. Leaves

oblong, acute, subpetiolate, grossly serrated, and, as well as the calyx, hispid; upper ones nearly entire. Flowers in a terminal many-flowered corymb, which lengthens into a spike after the flowers have expanded; tube of the corolla twice as long as the calyx; segments of the limb cuneate and emarginate.

DESCRIPTION, &c.—This extremely beautiful species is a native of Buenos Ayres, and Paraguay, whence it was introduced in 1827; and it has since become such a favourite in our flower-gardens, as to be now well known in every part of the kingdom. As it hybridises freely, many kinds have been raised from it; none of which, however, are quite so beautiful as the species, though they have the advantage of being much hardier. The species itself will not bear an English winter without protection; but *V. M. latifolia* is as hardy as the common pink. *Melindres* is the aboriginal name of the plant at Buenos Ayres.

6.—VERBENA TEUCROIDES, *Gill et Hook.* THE GERMANDER-LIKE VERBENA.ENGRAVINGS.—*Bot. Mag.*, t. 3694; *Pact. Mag. of Bot.*, Vol. V., p. 248; and our *fig.* 2, in Pl. 91.

SPECIFIC CHARACTER.—Stem erect, branched, clothed with rigid

glandular hairs. Leaves oblong-lanceolate, deeply-cut, sessile. Spike elongated, densely flowered. Calyx elongated, and becoming twisted with age, only half the length of the tube of the corolla.

DESCRIPTION, &c.—When this species of *Verbena* was first introduced in 1837, it was so highly praised that everybody was quite anxious to possess a plant. Experience, however, has shown that it by no means deserved the high commendations bestowed upon it, as it is coarse-growing, with weedy foliage, and no particular beauty in its flowers. It has, however, the advantage of being hardy, as, though it is a native of South America, it is only found on the summit of lofty mountains, generally ten thousand feet above the level of the sea.

OTHER SPECIES OF VERBENA.

V. INCISA, *Hook.*, Bot. Mag., t. 3628.

This very pretty species has an upright habit of growth, pale pink flowers, and deeply cut leaves. It is a native of Santa Fé, whence it was introduced in 1836. It is very nearly hardy, and it will flower in the open ground from June till it is destroyed by frost.

V. TWEEDIANA, *Hook.*, Swt. Brit. Gard., 2nd ser., t. 391 ; and our *fig.* 3, in Plate 91.

This is also an upright-growing species, which is very nearly hardy, and will live all the year in the open ground without protection, except in case of very severe frosts. It is a native of South America, whence it was introduced about 1830 ; and as it hybridises freely with both Melindres and the purple kinds, it has been the parent of many beautiful kinds of Verbena. The flowers are crimson, and they are disposed in a dense spike, which elongates as it becomes old. No plant can strike more readily from cuttings ; and, notwithstanding the upright habit of growth which is natural to it, no plant can better bear pegging down. It is a most valuable species for town gardens, as it can bear the smoke without injury ; and it is very useful to those who like to raise new plants, as it bears abundance of seed.

V. HASTATA, *Spring.*

This species is little known in British gardens, though it is said to have been introduced in 1710, from Canada, of which country it is a native. The flowers are purple, and the leaves halberd-shaped.

V. SCABRA, *Spring.*

A species with rough leaves and violet-coloured flowers ; a native of Mexico, whence it was introduced in 1822. It is, however, very seldom grown.

V. ALATA, *Swt.*, Brit. Flow. Gard., 2nd ser., t. 41.

This species has winged stalks, and small purple flowers. It is a native of Monte Video, whence it was introduced in 1827. It has no beauty to recommend it.

V. SORORIA, *D. Don.*

A native of Nepaul, with lilac flowers, introduced in 1823. It is quite hardy in British flower-gardens, and soon covers a bed when pegged down. The mode of doing this is to spread the stalks of the plant over the bed, and cover all the joints with earth, fastening the stalk of the plant down to the ground on both sides of the joints with a little bit of forked stick. The joints thus covered will soon throw out roots, which will strike into the ground, while a shoot will rise upwards from the joint bearing a flower. When plants are to be pegged, they should be put into the ground above eighteen inches or two feet apart, or else they will grow erect, with long, naked, straggling stems, instead of becoming bushy and spreading.

V. SPURIA, *Spring.*

The flowers are lilac, and the leaves jagged. The species is a native of North America, whence it was introduced in 1731. It is generally considered a biennial, but it will sometimes live three or four years in the open ground.

V. RUGOSA, *D. Don*, Swt. Brit. Flow. Gard., 2nd ser., t. 318.

The flowers are dark purple, and the leaves ragged. The species is a native of Buenos Ayres, whence it was introduced in 1837. It is rather more tender than most of the other species of the genus, but it will flower well in the open air during the summer, if it be taken up in autumn, or protected in any way during the winter.

V. VENOSA, *Hook*, Swt. Brit. Flow. Gard., 2nd ser., t. 207.

This is a very robust species, with dark purple flowers, and abundance of coarse strongly-veined leaves. It is a free grower, and quite hardy in British gardens, though it is a native of Buenos Ayres, whence it was introduced about 1830. It is well adapted for covering a bed in a flower-garden, on account of the great rapidity of its growth.

V. PULCHELLA, *Swt. Brit. Flow. Gard.*, t. 295.

A very pretty little plant, with lilac flowers; a native of Buenos Ayres, introduced in 1827.

V. SULPHUREA, *Lindl.*, Swt. Brit. Flow. Gard., 2nd ser., t. 221.

The flowers are of a pale yellow. The species is a native of Chili, and was introduced in 1834; it is only half-hardy in British gardens.

V. CANESCENS, *Spreng.*

A native of Mexico, with violet-coloured flowers, and leaves covered with a whitish down. It was introduced in 1820, and is quite hardy.

V. PROSTRATA, *Ait.*

½ A trailing plant, with lilac flowers; a native of North America, introduced in 1794.

V. BONARIENSIS, *Spreng.*

A native of Buenos Ayres, introduced in 1732; the flowers of which are blue, and are produced in clusters. It is quite hardy, but is only a biennial.

GARDEN VARIETIES OF VERBENA.

Besides the numerous species of Verbena, which have been above enumerated, and several others, to be found in books, though they are rarely seen in gardens, are the following varieties, and hybrids, the names of which are not to be found in the principal catalogues of plants, and which yet few flower-gardens are without.

V. ARRANIANA, *Hort.*

A very handsome upright-growing plant, with purple-crimson flowers. It is said to have been raised at the Earl of Arran's seat, at Bognor; and it is well deserving of cultivation, as it grows and flowers freely, though it is rather tender. It was raised about 1834.

V. CÆRULESCENS, *Hort.* Our fig. 3, in Pl. 91.

The flowers are produced in one thick elongated spike, and are of a pale blue. The plant grows and flowers freely, but is rather tender. It was raised about 1840.

V. FORMOSA, *Hort.*

The flowers are of a bright scarlet, with a white centre, and the plant is hardy.

V. FULGENS AND V. IGNEA

Have flowers of so deep a scarlet, as in some lights to appear nearly black; and

V. SPLENDENS

Has large flowers of a dazzling scarlet, but lighter.

CHAPTER XLII.

PRIMULACEÆ.

CHARACTER OF THE ORDER.—Calyx divided, five-cleft, seldom four-cleft; inferior, regular, persistent. Corolla monopetalous, hypogynous, regular; the limb five-cleft, seldom four-cleft. Stamens inserted upon the corolla, equal in number to its segments, and opposite them.

Ovary one-celled; style 1; stigma capitate. Capsule opening with valves; placenta central, distinct. Seeds numerous, peltate; embryo included within fleshy albumen, and lying across the hilum; radicle with no determinate direction.

DESCRIPTION, &c.—All the species belonging to this order are herbaceous plants; generally of low stature, and with pretty flowers. They are most abundant in the temperate regions; and, when they grow within the Tropics, they are generally found on the sea-coast, or on the summit of lofty mountains. The name of Primulaceæ signifies the first, in allusion to most of the species flowering early in spring. Nearly all the plants belonging to this order are quite hardy in Great Britain.

GENUS I.

CYCLAMEN, *L.* THE SOWBREAD.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft. Corolla rotate. Segments reflexed. Tube very short. Faux prominent. Stamens five. Anthers connivent. Stigma one. Scape one-flowered. Flowers naked.

DESCRIPTION, &c.—All the kinds of Cyclamen are generally easily recognised by the reflexed segments of the flowers. They have tuberous roots, and most of the species are natives of Europe. The word Cyclamen signifies a succession of circles, in allusion to the curious manner in which the flower-stalks curl up when the seeds begin to ripen; and the name of Sowbread alludes to the fondness of swine for the tubers of the Italian species.

1.—CYCLAMEN COUM, *Mill.* THE ROUND-LEAVED CYCLAMEN.

SYNONYMES.—*C. orbiculata*, *Bauh*; *C. hyemale*, *Herm.*

ENGRAVING.—*Bot. Mag.*, t. 4.

SPECIFIC CHARACTER.—Stemless. Leaves kidney-shaped; petioles shorter than the flower-stalks; flowers small; style enclosed.

DESCRIPTION, &c.—This species grows wild in many parts of Italy and Germany, in woods and shady places, where it sometimes flowers as early as February when the weather is mild. In British gardens, however, it seldom flowers before March or April, unless kept in pots. This plant cannot be increased by dividing the roots, as the principal root-stock is a kind of tuber resembling a turnip, and cannot be divided without injury; but the species is easily increased by seed, which should be sown as soon as it is ripe in pots or boxes. The boxes should then be placed where they will have only the morning sun till the beginning of September, when they will bear a warmer exposure. They may be slightly protected if the winter should be severe, and may be planted out early in spring, or left to flower where they were sown, as may be most convenient.

2.—CYCLAMEN VERNUM, *Mor.* THE SPRING CYCLAMEN.

SYNONYMES.—*C. vernale*, *Steud.*; *C. coum*, *Lodd.*

ENGRAVINGS.—*Lodd. Bot. Cab.*, t. 108; *Swt. Brit. Flow. Gard.*, t. 9; and our *fig. 3*, in *Pl. 92*.

SPECIFIC CHARACTER.—Sub-caulescent. Leaves cordate, subrenulate, emarginate at the apex, sinus overlapping at the base; segments of the corolla oblong-ovate; style exerted.

DESCRIPTION, &c.—This species bears considerable resemblance to *C. coum*; but it differs in having a stem, though it is a very short one, and cordate leaves with the sides overlapping at the base. The species is a native of



1. *Delphinium consolida* — 2. *Cyclamen repandum* — 3. *Cyclamen verum*
 4. *Cyclamen hederifolium* — 5. *Adonis vernalis*

the South of Europe, whence it was introduced in 1814. The following observations on its culture are taken from Sweet's British Flower Garden, Vol. I. :—

"It will succeed well in a warm border, in a light sandy soil; or it may be grown with advantage in small pots, in an equal mixture of loam, peat, and sand; it can then be protected under a frame in winter, during which time it requires very little water. The only method of propagating it is from seeds, which ripen plentifully, if care be taken to scatter some pollen on the stigma when in full bloom."

3.—CYCLAMEN EUROPÆUM, *Ram. et Schult.* THE EUROPEAN CYCLAMEN.

ENGRAVING.—SWT. Brit. Flow. Gard., t. 176.

SPECIFIC CHARACTER.—LEAVES orbiculate, cordate, crenate, and denticulate. Segments of the corolla lanceolate.

DESCRIPTION, &c.—The tuber of this species is large and rough, producing short rugged stems, from which spring the leaves and flowers. The leaves vary in form, but they are always toothed with short, unequal, horny teeth; and this is a peculiarity which always marks the species. The flowers are also much larger, with long narrow segments, which stand up like ears; and the flower-stalks are very long. The flowers are delightfully fragrant. The species is a native of Hungary and Switzerland, where it grows in a light sandy soil. It is quite hardy in British gardens; the only care it requires being to plant it in a situation where it will be tolerably dry during winter. It was introduced before 1596, and is consequently one of the oldest exotic flowers in British gardens.

4.—CYCLAMEN PERSICUM, *Mill.* THE PERSIAN CYCLAMEN.

ENGRAVINGS.—BOT. MAG., t. 44; and our *fig. 4*, in Plate 92.

SPECIFIC CHARACTER.—LEAVES cordate, finely serrated. Segments of the corolla lanceolate, elongated.

DESCRIPTION, &c.—This is by far the most beautiful species of the genus; though, from being a native of the East Indies, it is rather tender in British gardens. On this account, it is generally cultivated in pots, which are plunged in the earth during the summer months, and kept in a cold pit during the winter. It is generally grown in a mixture of loam and lime rubbish; but the compost is improved by a mixture of decayed leaves. It is generally raised from seeds; but the plants vary very little from each other, the principal difference being in the degree of fragrance, and the dark colour of the eye. The flowers appear very early in spring. There are a great many varieties mentioned in botanical catalogues, one which has no scent; another is of a pure white, and the third, which is the only one really distinct, has deeply-cut petals, which are extremely broad, and have the appearance of being fringed. The whole plant is very large, and the corolla is never reflexed. This singular variety is figured in the *Botanical Register*, t. 1095. The species was introduced in 1731.

5.—CYCLAMEN REPANDUM, *Sibth.* THE ANGULAR-LEAVED CYCLAMEN.

SYNONYME.—*C. Hederifolium, Sims.*

ENGRAVINGS.—BOT. MAG., t. 1001; Sweet's Brit. Flow. Gard., t. 117; and our *fig. 2*, in Pl. 92.

SPECIFIC CHARACTER.—LEAVES cordate, widely expanded at the

base, unequally angular, more or less denticulate with very small white teeth; petioles furrowed on the upper side, and rounded on the lower: clothed with minute tubercles and brown pubescence. Segments of the corolla oblong or obtuse.

DESCRIPTION, &c.—This very distinct species is easily recognised by the leaves, which are somewhat angular, instead of being rounded, as is generally the case with plants belonging to this genus. They are also blotched with white on the upper surface, and purple beneath. The flowers are very handsome, from the

richness of their colour, and they form an agreeable contrast to the Persian Cyclamen. They may be grown in pots in the same manner as that species, or in any warm border, provided the soil is light and somewhat sandy. The species is generally propagated by seed, which should be sown as soon as it is ripe. The species is a native of Greece, whence it was introduced about 1806. The flowers are delightfully fragrant.

OTHER SPECIES OF CYCLAMEN.

C. HEDERÆFOLIUM, *Lin.*

This is the common British species, of which there are two varieties; one with purple flowers, and another, the flowers of which are white.

C. NEAPOLITANUM, *Ten.*

This species has red flowers. It is a native of Naples, and was introduced in 1826. It is probably nearly allied to *C. repandum*.

C. LATIFOLIUM, *Sib.*

This species has lilac flowers, and broad leaves. It is a native of Greece, and was introduced in 1823.

GENUS II.

DODECATHEON, *Lin.* THE AMERICAN COWSLIP.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-cleft, persistent, segments reflexed, only half the length of the calyx. Corolla five-parted, tube shorter than the calyx; limb reflexed; segments very long, lanceolate-oblong. Stamens five, filaments very short, united into a tube;

anthers sagittate, conniving so as to form a beak. Style filiform; stigma obtuse. Capsule oblong, opening at the apex. Seeds numerous, very small. Involucre many-leaved, very small.

DESCRIPTION, &c.—The plants belonging to this genus are nearly all included in one species, which is known by the popular English name of the American Cowslip. The botanical name given to it by Linnæus signifies Twelve Gods; but there seems no reason why it should be applied to this flower.

1.—DODECATHEON MEADIA, *Lin.* DR. MEAD'S AMERICAN COWSLIP.

ENGRAVINGS.—Bot. Mag., t. 12; Bot. Cab., t. 1489; Sweet's Brit. Flow. Gard., 2nd ser., t. 60; and our fig. 1, in pl. 92.

SPECIFIC CHARACTER.—Leaves oblong-oval, repandely dentate, and sinuated. Umbels many-flowered, lax; bracts oval, lanceolate.

DESCRIPTION, &c.—This well-known plant varies exceedingly when raised from seed; and there are indeed, ten or twelve varieties, which are considered sufficiently distinct to be named. They are all more or less ornamental, and all perfectly hardy in British gardens; and they are propagated either by seeds, or by division of the roots. The species is a native of Virginia, whence it was introduced in 1744.

2.—DODECATHEON INTEGRIFOLIUM, *Michx.* THE ENTIRE-LEAVED AMERICAN COWSLIP.

ENGRAVING.—Bot. Mag., t. 3622.

SPECIFIC CHARACTER.—Leaves spatulate, entire. Umbels small,

few-flowered; peduncles divaricate; bracts ovate. Filaments forming an elongated tube.

DESCRIPTION, &c.—This species was found by Dr. Richardson in the woody country of British North America, and by Mr. Drummond in the Rocky Mountains. It was introduced in 1829, but was probably soon lost; at least, it does not appear to have become common in collections. Another species was found

by Dr. Richardson on the Arctic shores, which closely resembled this in every respect, excepting that the anthers were sessile, instead of the filaments forming an elongated tube. Another species was found by Douglas in North-West America, but it does not appear to have been ever introduced.

GENUS III.

SOLDANELLA, *Lin.* THE SOLDANELLA.*Lin. Syst.* PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Calyx five-parted, segments lanceolate. | Stigma simple. Capsule oblong, cylindrical, striated, opening at the
Corolla campanulate or funnel-shaped; segments deeply lacerated | apex into numerous valves. Seeds numerous, very small, acuminate.
or fringed. Stamens five, filaments adhering, anthers sagittate.

DESCRIPTION, &c.—All the species belonging to this genus are little, tufted, stemless, plants, with roundish leaves, and pretty fringe-like flowers. The name of *Soldanella* signifies a little shilling, in allusion to the roundness and small size of the leaves. All the species are natives of Europe, and are quite hardy in British gardens.

1.—SOLDANELLA ALPINA, *Lin.* THE ALPINE SOLDANELLA.

ENGRAVING.—*Bot. Mag.*, t. 49.

SPECIFIC CHARACTER.—Leaves slightly cordate. Segments of the corolla fringed.

DESCRIPTION, &c.—This species is a native of Switzerland, whence it was introduced in 1656. The flowers are very pretty; but the segments are so slightly cut at the margin, as only to appear fringed. It flowers usually in March, in the open ground, and it thrives best under the shade of trees, as it requires shade and moisture during the summer. On account of its small size, it is, however, frequently grown in pots; and it requires a slight protection during very severe winters, as, like all Alpine plants in their native country, it is protected during the winter by the snow.

2.—SOLDANELLA MONTANA, *Willd.* THE MOUNTAIN SOLDANELLA.

SYNONYME.—*S. Clusii*, *Sims*.

ENGRAVINGS.—*Sweet's Brit. Flow. Gard.*, t. 11; and our *fig. 5*, in Pl. 92.

SPECIFIC CHARACTER.—Leaves reniform, slightly crenate, reticulate veined; sinus overlapping at the base; petiole hairy. Scape many-flowered.

DESCRIPTION, &c.—This species differs from *S. Alpina*, in being “more robust; in bearing more flowers on each scape; the segments of which are larger, and spread more flatly open; the termination of the filament beyond the anther is simple and subulate; and the petioles are densely hairy. In *S. Alpina*, the scape is few-flowered; the flowers are more finely fringed and bell-shaped; the filament beyond the anthers terminates in a bifid point; the leaves are narrower, more entire, and the petioles smooth.” The culture of this species resembles that of the preceding species, and both may be increased either by dividing the root or by seeds. In the latter case, the seeds should be sown as soon as they are ripe, and the young plants removed, while in their seed-leaf, to the pots in which they are to flower. The species is a native of Bohemia, and was introduced in 1816.

OTHER SPECIES OF SOLDANELLA.

S. PUSILLA, *Swt.* ; Sweet's Brit. Flow., 2nd ser., t. 48.

A pretty little plant, with campanulate violet-coloured flowers, the segments of which are deeply, but very finely, cut. The species is a native of Switzerland, and it was introduced in 1824.

S. MINIMA, *Hoppe* ; Sweet's Brit. Flow. Gard., 2nd ser., t. 53.

This species is a native of the Carpathian Mountains, whence it was introduced in 1820.

GENUS IV.

CORTUSA, *Lin.* THE BEAR'S-EAR SANICLE.

Lin. Syst. PENTANDRIA MONOGYNIA.

GENERIC CHARACTER.—Corolla funnel-shaped ; ring of the faux elevated. Capsule one-celled, oval, opening at the apex into five valves, many-seeded.

DESCRIPTION, &c.—There is only one species in this genus ; and the name of Cortusa is that of the botanist who first discovered it.

1.—CORTUSA MATTHIOLI, *Lin.* THE COMMON BEAR'S-EAR SANICLE.

ENGRAVING.—*Bot. Mag.*, t. 987.

SPECIFIC CHARACTER.—Calyx shorter than the corolla ; corolla funnel-shaped. ;

DESCRIPTION, &c.—This plant, though it has been introduced more than two hundred years, is still comparatively rare in British gardens ; and it has the peculiarity of standing alone in its genus, without any other species, or even variety. It is also remarkable for commemorating in its name the two botanists who introduced it to notice ; viz., Cortusa, its discoverer, and Matthioli, who first described it. The flowers are of a dark crimson, but they are rather small, and not remarkable for their beauty. The leaves are coarse-growing ; but if they are applied to the cheeks, and left there for some minutes, they produce a most beautiful colour, equal in delicacy to the finest rouge, which remains for some hours, and then fades away, without the slightest injury to the skin. The plant is a native of Austria, whence it was introduced in 1596.

GENUS V.

PRIMULA, *Lin.* THE PRIMROSE.

Lin. Syst. PENTANDRIA MONOGYNIA.

<p>GENERIC CHARACTER.—Flowers subumbellate, involucreted. Calyx tubular, persistent, five-toothed, or five-cleft, angular. Corolla salver-shaped, or funnel-shaped ; tube cylindrical, generally longer than the calyx ; faux visible, or rather gland-like ; limb spreading, five-lobed,</p>	<p>lobes emarginate. Stamens inclosed in the tube of the corolla. Stigma globose. Capsule 10-toothed at the apex, many-seeded ; seeds numerous, subrotund.</p>
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DESCRIPTION, &c.—The genus Primula takes its name from Primus, the spring, in allusion to the early flowering of most of the species. Few genera contain more well-known flowers ; and among these may be enumerated the Cowslip, the Primrose, the Polyanthus, and the Auricula. Nearly all the species of Primula are natives of Europe, with the exception of the Chinese Primrose, and two or three kinds brought from North America ; and nearly all the kinds are hardy in British gardens.



1. *Primula procumbens* — 2. *Primula amara* — 3. *Primula elatior*
4. *Primula acaulis*

1.—PRIMULA PRÆNITENS, *Ker.* THE CHINESE PRIMROSE.SYNONYME.—*P. sinensis*, *Lindl.*ENGRAVINGS.—*Bot. Reg.*, t. 539; *Bot. Mag.*, t. 2564; *Sweet's Brit. Flow. Gard.*, t. 196; and our *fig. 1*, in Pl. 93.

SPECIFIC CHARACTER.—Pubescent; umbel duplicate; calyx membranaceous, ovate, ventricose, many-cleft; capsule inflatedly distended; segments of the corolla sharply dentate.

DESCRIPTION, &c.—The Chinese Primrose was first known in this country from some dried specimens sent over by Mr. Reeves, a gentleman in the employment of the East India Company at Canton; but living plants were not introduced till 1820, when they were sent over by Captain Rawes, a gentleman to whom we owe the introduction of many beautiful Chinese plants. The species, when first introduced, was called *P. sinensis*; but it being found that Loureiro, the Portuguese botanist, had called another plant *Primula sinensis*, the Chinese Primrose received its present specific name, which signifies glossy, and seems very ill applied to a plant covered nearly all over with down. For many years after its introduction, the only varieties known of the Chinese Primrose were a kind with white flowers, and another, the flowers of which were much jagged or cut; but lately a great many varieties have been raised, some of which are double, or semi-double.

2.—PRIMULA CORTUSOIDES, *Lin.* THE CORTUSA-LEAVED PRIMROSE.ENGRAVING.—*Bot. Mag.*, t. 399.

SPECIFIC CHARACTER.—Leaves petiolate, cordate, sub-lobate, crenated.

DESCRIPTION, &c.—This is a very handsome little plant, a native of Siberia, whence it was introduced in 1794. The leaves are wrinkled, as is common in many kinds of *Primula*; but they present the peculiar shape of those of the *Cortusa*. It flowers in June and July, and is propagated either by seeds or by division of the root. In winter it loses its leaves entirely, and forms a tuberous hybernaculum under-ground, a circumstance the more necessary to be known, as it subjects the plant to be thrown away as dead.

3.—PRIMULA ACAULIS, *Jacq.* THE COMMON PRIMROSE.SYNONYME.—*P. vulgaris*, *Smith.*ENGRAVINGS.—*Bot. Mag.*, t. 229; and our *fig. 3*, in Pl. 94.

SPECIFIC CHARACTER.—Leaves rugose, dentate, hairy beneath; scape one-flowered.

DESCRIPTION, &c.—The common British Primrose is so well known, as scarcely to need description, and in their native state they are generally found to grow best in a stiff loam, and in a moist and somewhat shady situation. The single flower, being a common British plant, is rarely cultivated in gardens; but the double varieties are very common, and very much admired. There are several kinds; but the most common are the double lilac, the double crimson, and the double yellow. There is also a double scarlet, which is sometimes very dark and rich; and there is a double white, but this last is rarely met with.

4.—PRIMULA ELATIOR, *Smith.* THE OXLIP.ENGRAVINGS.—*Eng. Bot.*, t. 513, and 2nd ed., t. 276.

SPECIFIC CHARACTER.—Leaves ovate, contracted below the middle,

toothed, wrinkled; limb of the corolla flat, as long as the tube; teeth of the calyx subulate; umbel upon a long stalk.

DESCRIPTION, &c.—The Oxlip is much less common than either the Cowslip or the common Primrose; and it has, indeed, been sometimes supposed to be a natural hybrid between these two plants. The species is seldom cultivated in gardens; but its well-known variety, the *Polyanthus*, with its numerous sub-varieties, are some of our most favourite garden flowers. One of these, figured in Plate 94, is *Burnard's formosa*; and this

plant is said to have produced so much as to enable its owner to build a cottage with his profits. All the kinds of Polyanthus are considered florist's flowers, and they require to be grown in a rich loamy soil, and to be freely exposed to the sun and air. The colour of the Polyanthus is always yellow and brown, and those flowers are most esteemed that have the limb of the corolla flat, and its margin marked with a clear yellow line. The anthers of the stamens should also completely hide the pistil, as, when the stigma projects, which it does occasionally, like the head of a large pin, the flower is called pin-eyed, and is considered worthless. There is a double Polyanthus; but it is considered of little value in comparison with the finely marked single kinds.

5.—PRIMULA AMÆNA, *Bieb.* THE PURPLE CAUCASIAN PRIMROSE.

ENGRAVINGS.—*Bot. Mag.*, t. 3252; and our *fig.* 2, in Pl. 93.

SPECIFIC CHARACTER.—Leaves spatulate-oblong, rugose, crenately denticulate, hairy, and woolly below; umbels many-flowered; involu-

cre subulate; Calyx ovate-oblong, angular; limb of the corolla smooth; tube longer than that of the calyx.

DESCRIPTION, &c.—This very handsome species is a native of Mount Caucasus, whence it was introduced by Mr. Goldie, of Ayr. It is quite hardy in British gardens, producing masses of flowers if grown in a rich loamy soil. It may be propagated by seeds or by division of the roots.

6.—PRIMULA AURICULA, *Lin.* THE AURICULA.

ENGRAVING.—Our *fig.* 2, in Pl. 94.

SPECIFIC CHARACTER.—Leaves obovate, smooth, serrated; scape many-flowered, about equal in length to the leaves.

DESCRIPTION, &c.—The Auricula is a native of the Alps of Switzerland, and the mountainous countries adjoining it, whence it was called, when first introduced in 1596, the Mountain or French Cowslip. It was also called Bear's-ear or Oricola, whence the modern name of Auricula. It very soon became a favourite garden flower; in 1629, Parkinson enumerates 20 varieties, which he says are the best, though "many other varieties were to be found with those who are curious conservers of these delights of nature." The florists in the beginning of the last century were very particular in the culture of the Auricula; and many elaborate directions have been given for preparing soil for the Auricula, adding to it bullock's blood, sugar baker's scum, and concentrated night-soil. The plants will, however, thrive in any rich, loamy soil, with a slight mixture of sand. They will, however, grow in heath soil mixed with loam; and this is what is usually given to them in the neighbourhood of Paris. Though the Auricula is quite hardy, all the choice varieties of it are grown in pots, in order that they may be more completely under the control of the cultivator. It is also necessary to keep them in frames, or under hand-glasses, to protect them from the rain, as that would destroy the powdery bloom, the preservation of which is a desideratum among florists. The Auricula is propagated by division of the root, or by cutting off slips with a portion of the root attached, and putting them at once into small pots. The season for performing the operation is soon after the flowers have gone off. Auriculas, when grown as florist's flowers, have almost innumerable names; but they are all divided into three classes, viz., those with a green border and a white centre; those with a grey border and a white centre, and those which have only one colour, which last are called selfs. Like the Polyanthus, no Auricula is valued that has a pin-eye.



Primula elatior var. *polianthus* (*Bianca's formosa*, 2 *Primula auricula* (the conqueror of Europe)
3 *Primula vulgaris*, 4 double varieties).

7.—*PRIMULA SIBIRICA*, *Jacq.* THE SIBERIAN PRIMROSE.SYNONYMES.—*P. rotundifolia*, *Pall.*; and *P. intermedia*, *Lede.*ENGRAVINGS.—*Bot. Mag.*, t. 3167, and 3445; and our *fig.* 3, in Pl. 93.

SPECIFIC CHARACTER.—Smooth, naked. Leaves oval, or subrotund,

petiolate, and slightly crenated; umbel few-flowered, loose, and nodding; involucre divided into four oval, acute leaflets, which are spurred at the base.

DESCRIPTION, &c.—This is a very pretty species, and it has the advantage of being quite hardy in British gardens. It is a native of Siberia, whence it was introduced in 1818; and it is easily distinguished from all the other species of *Primula*, by its inflated calyx, the leaflets of which are swelled out at the base. The flowers of this species are produced in April or May.

8.—*PRIMULA CILIATA*, *Schrank.* THE FRINGED AURICULA.SYNONYMES.—*P. villosa*, *Suter*; *P. decora*, *Sims.*ENGRAVINGS.—*Bot. Mag.*, t. 1922; *Sweet's Brit. Flow. Gard.*, 2nd ser., t. 123 and 296; and our *fig.* 4, in Pl. 93.

SPECIFIC CHARACTER.—Leaves obovate, cuneiform, slightly glutinous,

opaque, and covered all over with very short fine hairs; scape angular, many-flowered; calyx short, campanulate, angular, and fringed with fine hairs like the leaves.

DESCRIPTION, &c.—This species is very nearly allied to the *Auricula*. There are two distinct varieties of it, one with pink flowers, figured in Plate 93, and another with purple flowers, which is much the handsomest. Both kinds are quite hardy in British gardens, and they require no particular care in their culture.

OTHER SPECIES OF *PRIMULA*.

These are very numerous. Indeed, more than twenty species might be enumerated, all of which are well deserving of cultivation.

CHAPTER XLIII.

IRIDACEÆ.

CHARACTER OF THE ORDER.—Calyx and corolla superior, confounded, their divisions either partially cohering, or entirely separate, sometimes irregular, the three petals being sometimes very short. Stamens three, arising from the base of the sepals; filaments distinct or connate; anthers bursting externally lengthwise, fixed by their base, two-celled.

Ovary three-celled, cells many-seeded; style one; stigmas three, often petaloid, sometimes two-lipped. Capsule three-celled, three-valved, with a loculicidal dehiscence. Seeds attached to the inner angle of the cell, sometimes a central column, becoming loose; albumen corneous, or densely fleshy; embryo inclosed within it.—(*Lindley.*)

DESCRIPTION, &c.—This order is almost entirely confined to herbaceous plants, some of which have bulbous roots; but others have fibrous roots. Those with bulbous roots have been already described in the volume of this work devoted to plants of that nature; and in the present work I shall only describe a few of the more ornamental of the fibrous rooted species belonging to the genera *Iris* and *Sisyrinchium*.

GENUS I.

IRIS, *Lin.* THE FLOWER DE LUCE, OR FLAG-FLOWER.*Lin. Syst.* TRIANDRIA MONOGYNIA.

GENERIC CHARACTER.—Spathe two-valved, one, or many-flowered. Perianth large, and six-parted; three of the segments erect, and the three alternate ones reflexed. The stamen bearing segments, bearded

or not bearded. Style short. Stigmas three, petal-like, large, oblong, lying over the stamens.

DESCRIPTION, &c.—All the species of *Iris* are remarkable for the beauty of their flowers. They have all a curiously folded leaf-like stem, called a spathe, from which the flower issues; and the flower itself consists of six

divisions, three of which stand erect, and are called by modern botanists the corolla; and the other three, which are bent back, are called the calyx. Besides these, there are three other leafy bodies, which are, in fact, the stigmas, and under each of which lies a stamen. All the fibrous-rooted kinds of *Iris* are furnished with a fleshy underground stem, called a rhizoma, or root stalk; and the leaves of nearly all the species are sword-shaped, like those of most kinds of bulbs. The word *Iris* signifies a rainbow, and is applied to this genus in allusion to the various colours of the flowers.

1.—*IRIS SUSIANA*, *Lin.* THE CHALCEDONIAN IRIS.

ENGRAVINGS.—*Bot. Mag.*, t. 91; and our *fig.* 1, in Pl. 95.

SPECIFIC CHARACTER.—Leaves ensiform, glabrous; scape one-flowered; flower bearded; petals roundish.

DESCRIPTION, &c.—This splendid plant is a native of Persia; and from Susiana, one of the cities in that country, it takes its name. It grows about two feet high, and flowers freely in the open air in Britain about the latter end of May, or the beginning of June. It should be grown in a loamy soil, and in an open situation, where it is freely exposed to the sun and air; and it will not thrive in close town gardens, or in any situation where it is exposed to a smoky atmosphere, or too much moisture. It is generally propagated by taking off the new tubers that it forms every year; but as these are rarely brought to perfection in this country, for want of heat in our summers, tubers are every year imported from Holland. This species is called in the old books the great Turkey flower de luce, because it was first imported into this country from Constantinople. It was introduced in 1573.

2.—*IRIS FLORENTINA*, *Lin.* THE FLORENTINE IRIS.

SYNONYME.—*I. alba*, *Bauh.*

ENGRAVINGS.—*Bot. Mag.*, t. 671; and our *fig.* 2, in Pl. 95.

SPECIFIC CHARACTER.—Leaves glaucous, shorter than the stem;

spathe membranaceous, one or two-flowered, shorter than the tube; segments of the calyx revolutely deflexed; stigmas oblong; segment of the corolla erect, and curving inwards.

DESCRIPTION, &c.—The root stock of this species, which is thick, fleshy, and creeps horizontally along the ground, forms the powder known as orrice powder or orrice root in the shops, which is frequently used to give fragrance to tooth-powder, from its possessing a strong scent of violets. Orrice root is a corruption of *Iris* root; but that used by the perfumers is all imported from Leghorn, as what is produced in this country has scarcely any fragrance. The colour called Verdelis, or Iris green, is made from the flowers of this species, and those of *I. germanica*. The Florentine Iris is a native of Italy, and other parts of the South of Europe, and it takes its name from its growing in great abundance on the walls of Florence. It has also been found in Algiers, where it is grown with *I. germanica*, to cover graves. It was introduced before 1596, and it is quite hardy in British gardens.

3.—*IRIS GERMANICA*, *Lin.* THE COMMON PURPLE, OR GERMAN IRIS.

SYNONYMES.—*I. sambucina*, *Thunb.*; *I. squalens*, *Mill.*; *I. cerulea*, *Wein.*; *I. silvestris*, *Bauh.*; *I. vulgaris*, *Ger.*; *I. latifolia*, *Clus.*; *I. purpurea*, *Park.*

ENGRAVING.—*Bot. Mag.*, t. 670.

SPECIFIC CHARACTER.—Spathe partly herbaceous, and partly membranaceous; one or two-flowered, including the tube of the flower; leaves acuminate, shorter than the stem.

DESCRIPTION, &c.—This species bears considerable resemblance to the last, excepting that the flowers are purple instead of white, and that the root stock is not sweet scented; and if chewed it will be found to be slightly bitter, and to produce a most disagreeable heat in the throat. This is the commonest species of *Iris* in British

gardens; and it is propagated by dividing its roots in autumn. It is perfectly hardy, and it flowers in May and June. It is a native of Germany, whence it was introduced before 1596.

4.—IRIS TRIDENTATA, *Pursh.* THE THREE-TOOTHED IRIS.

SYNONYME.—*I. tripetala, Walt.*

ENGRAVINGS.—*Bot. Mag.*, t. 2886; *Sweet's Brit. Flow. Gard.*, t. 274; and our *fig.* 4, in Pl. 95.

SPECIFIC CHARACTER.—Leaves linear-ensiform, acuminate; stem

round, leafy, generally one-flowered, and longer than the leaves; perianth not bearded; inner segments very short, unequal, three-toothed; stigmas three, or sometimes four, having a tooth on each side of the base; capsule trigonal.

DESCRIPTION, &c.—This is a remarkable species, both in form and colour. The segments of the corolla are so small that they lose their ordinary character, and the stigmas appear to be the petals. The leaves are narrow and grass-like. The flowers begin to appear in July, and continue till October. The species is a native of North America, and was introduced in 1824.

5.—IRIS VERNA, *Michx.* THE SPRING IRIS.

ENGRAVINGS.—*Sweet's Brit. Flow. Gard.*, t. 68; and our *fig.* 5, in Pl. 95.

SPECIFIC CHARACTER.—Stemless; one-flowered; leaves linear-ensiform, more than twice as long as the flower scape, coriaceous, acute,

slightly glaucous; scape sheathed at the base with small leaf-like bracts; segments of the perianth all nearly equal in size; capsule obsoletely trigonal.

DESCRIPTION, &c.—This species has neither root-stalk nor tubers; but it has a creeping, underground stem, from each joint of which proceeds a flower stem, with a single flower, and two or three leaves. From this habit of growth it will be seen that, in favourable situations, *Iris verna* will soon cover a bed with flowers; which, from their dwarf stature, compact, elegant form and lively colours, have an extremely agreeable appearance. The species is a native of North America, whence it was introduced in 1748. It will grow in almost any soil and situation; and it is propagated by dividing its creeping stem.

6.—IRIS NEPALENSIS, *D. Don.* THE NEPAL IRIS.

ENGRAVINGS.—*Sweet's Brit. Flow. Gard.*, 2nd ser., t. 11; and our *fig.* 3, in Pl. 95.

SPECIFIC CHARACTER.—Beard crested; leaves linear-ensiform, flat,

strongly nerved, and terminating in a slender mucro; perianth tubular, elongated; segments of the limb all spreading, and more or less reflexed; stigmas fringed; stem round, few flowered, shorter than the leaves.

DESCRIPTION, &c.—The roots of this species are fleshy, and they are produced in fascicles like those of the *Dahlia*. The flowers are generally of a pale blue; but they frequently assume a much darker tint. The species is a native of Nepal, whence it was introduced in 1830; and not, as it is stated in some of the catalogues, in 1824. A great confusion, indeed, exists respecting this species, in the nurseries; as another kind, with much larger flowers, is frequently called *I. Nepalensis*. The present species is quite hardy in British gardens.

OTHER SPECIES OF IRIS.

These are so very numerous, that the limits of the present work will not allow of their being given in detail. They are all natives of temperate climates, and consequently hardy in British gardens; and the colours of their flowers are yellow, blue, violet, purple, and white.

GENUS II.

SISYRINCHIUM, *Lin.* THE SISYRINCHIUM.*Lin. Syst.* MONADELPHIA TRIANDRIA.

GENERIC CHARACTER.—Perianth regular, and divided into six equal parts. Stamens three, monadelphous; anthers versatile. Stigmas three, simple. Capsule turbinate, three-celled, three-valved, many-seeded. Seeds roundish, smooth, black.

DESCRIPTION, &c.—Most of the plants belonging to this genus are too tender to bear the climate of Britain, without protection; but some few of the species are natives of North America, and are perfectly hardy in the open air. The name of *Sisyrinchium* signifies a hog's snout; and it is said to allude to pigs being so fond of the fleshy roots, as to dig them up and devour them, whenever they have an opportunity.

1.—SISYRINCHIUM GRANDIFLORUM, *Lindl.* THE LARGE-FLOWERED SISYRINCHIUM.

ENGRAVINGS.—*Bot. Reg.*, t. 1364; *Sweet's Brit. Flow. Gard.*, 2nd ser., t. 388; and in our *fig. 4*, Pl. 96.

SPECIFIC CHARACTER.—Scape and leaves cylindrical, hollowed, and

furrowed. Segments of the perianth obcordate; filaments free above, and connate below.

DESCRIPTION, &c.—This plant, when not in flower, looks like a tuft of bluish-green grass; but when the flowers expand, it has a very different appearance, as they are large in proportion to the scapes from which they spring, and they are of a rich, dark purple. The species is a native of California, and it is one of the first plants sent home from that country, having been introduced in 1826. The plant is quite hardy in British gardens. It should be grown in a mixture of peat and loam, and is readily multiplied by division of the root, or by seeds.

OTHER SPECIES OF SISYRINCHIUM.

There are four or five other species of this genus that are natives of North America, and consequently hardy in British gardens; but their flowers are too small in proportion to their leaves, for them to be considered as ornamental plants.

CHAPTER XLIV.

HEMEROCALLIDEÆ.

CHARACTER OF THE ORDER.—Calyx and corolla confounded, cowering into a tube. Stamens six, inserted in the segments of the perianth. Anthers opening inwards. Ovary superior, three-celled, many-seeded; style one; stigma simple. Fruit succulent, three-celled. Seeds packed one upon another in one or two rows; seed-coats soft and pale.

DESCRIPTION, &c.—The principal genera contained in this order, which include ornamental plants hardy in British gardens, are *Hemerocallis* and *Funkia*, which were both formerly included in the genus *Hemerocallis*. There is another genus, called *Tritoma*, which contains hardy plants; but the flowers, though singular, can scarcely be called ornamental.



1. *Salicaria virginica*. 2. *Commelina calistea*. 3. *Funkia pulva*.
4. *Sorbarachium grandiflorum*.

GENUS I.

HEMEROCALLIS, *Spreng.* THE DAY LILY.*Lin. Syst.* HEXANDRIA MONOGYNIA.

GENERIC CHARACTER.—Perianth campanulate; tube cylindrical. Stamens six; filaments long, declining. Stigma very small, simple, hairy.

DESCRIPTION, &c.—This genus differs very slightly from *Funkia*, which has been separated from it. It takes its name from two Greek words, signifying, The Beauty of the Day. The species still left in *Hemerocallis* have yellow orange flowers; and those which compose the genus *Funkia*, have flowers which are either lilac or white. All the species have lily-like flowers, and are quite hardy in British gardens.

1.—HEMEROCALLIS GRAMINEA, *Andr.* THE GRASS-LEAVED DAY LILY.

SYNONYMES.—*H. flava*, var., *Willd.*; *H. minor*, *Mill.*

ENGRAVINGS.—*Bot. Mag.*, t. 873; *Bot. Rep.*, t. 244.

SPECIFIC CHARACTER.—Leaves triangular, furrowed, very narrow.

Bracts membranaceous, very short. Corolla campanulate; segments elliptic-ovate, undulately crisped at the margin; pistil shorter than the corolla.

DESCRIPTION, &c.—The flowers of this species are of a bright yellow, and they are slightly fragrant. In form, they resemble small lilies. The species is a native of Siberia, whence it was introduced in 1759. It is quite hardy in British gardens, where it will grow in any soil and situation not immediately under the drip of trees.

2.—HEMEROCALLIS FLAVA, *Lin.* THE YELLOW DAY LILY.

SYNONYME.—*Lilium luteum*, *Bauh.*

ENGRAVING.—*Bot. Mag.*, t. 19.

SPECIFIC CHARACTER.—Leaves linear, subulate, keeled; flower yellow.

DESCRIPTION, &c.—This was the first species of the genus introduced, and it was from the short duration of its blossoms that the species received its popular English name of the Day Lily. The flowers are delightfully fragrant. This species is a native of Hungary, and bears the climate of Britain exceedingly well; but it requires a moist soil and somewhat shady situation to make it flower freely. It is propagated by dividing its roots in the autumn. It was introduced before 1596.

3.—HEMEROCALLIS FULVA, *Lin.* THE COPPER-COLOURED DAY LILY.

SYNONYMES.—*H. disticha*, *Donn*; *Lilium rubrum*, *Bauh.*

ENGRAVINGS.—*Bot. Mag.*, t. 64; and our *fig. 3*, in *Pl. 96*, under the name of *Funkia fulva*.

SPECIFIC CHARACTER.—Leaves linear, subulate, keeled; flower copper-colour.

DESCRIPTION, &c.—It has been observed that almost the only instances in which Linnæus has mentioned the colour of the flower as a part of the specific character of a plant, occur in this and the preceding species; and it has been alleged on this account, that Linnæus considered them as only varieties. The flowers, however, of this species are nearly twice as large as those of *H. flava*. They have no gloss, and no fragrance. The leaves of this species are, however, very handsome, and when they first appear they are of so delicate a green, as to be considered nearly as handsome as the flower. This plant is a native of China, and was introduced before 1596. This species does not ripen seeds so well as *H. flava*; but it sends up an abundance of offsets, and spreads so fast as to render it difficult to eradicate it when once thoroughly established.

GENUS II.

FUNKIA, R. Br. THE PURPLE DAY LILY.

Lin. Syst. HEXANDRIA MONOGYNIA.

GENERIC CHARACTER.—Perianth funnel-shaped, deciduous. Stamens six, inserted in the middle, or at the base of the tube, declining. Anthers incumbent; cells parallel, connate. Style declining. Stigma club-shaped, undivided, trigonal. Capsule turbinate oblong, three-celled, three-valved, many seeded. Seeds disposed in a double row. Embryos from six to ten.

DESCRIPTION, &c.—This genus contains the purple and white species formerly included in the genus *Hemerocallis*. All the species are natives of Japan. The genus was named after H. C. Funk, an apothecary in Prussia, who discovered several new mosses, and published some illustrations of the Cryptogameous plants of Germany.

1.—FUNKIA SUBCORDATA, *Spreng.* THE SWEET-SCENTED DAY LILY OF JAPAN.

SYNONYMS.—*Hemerocallis japonica*, *Lin.*; *H. alba*, *Andr.*; *Aletris japonica*, *Houtt.*; *Jocksan*, *Kampf.* sheathing the stem; strongly nerved, subundulいた at the margin; raceme many flowered; corolla somewhat campanulate, with a recurved limb.

ENGRAVINGS.—*Bot. Mag.*, t. 1433; and *Bot. Rep.*, t. 194.

SPECIFIC CHARACTER.—Leaves broadly ovate-acute, with petioles

DESCRIPTION, &c.—This is a very handsome species. The leaves are numerous, and from two to six inches broad. The flowers are of a pure white, very fragrant, and frequently six inches long. The anthers are of a golden yellow. It is a native of China and Japan, whence it was introduced in 1790. It is quite hardy in British gardens; but it does not blossom there till September or October.

2.—FUNKIA OVATA, *Spreng.* THE OVATE-LEAVED FUNKIA, OR PURPLE CHINESE DAY LILY.

SYNONYMS.—*Hemerocallis cerulea*, *Andr.*; *H. japonica*, var. *Willd.* SPECIFIC CHARACTER.—Leaves petiolate, ovate, acuminate, somewhat plicate, strongly nerved; bracts membranaceous; raceme many flowered; tube of the corolla cylindrical, sulcate; limb campanulate.

ENGRAVINGS.—*Bot. Mag.*, t. 894; *Bot. Rep.*, t. 6.

DESCRIPTION, &c.—This is the common purple Day Lily. It is a native of China, and was introduced about 1790. It is quite hardy in British gardens; and will bear the smoke of London without receiving any injury.

OTHER SPECIES OF FUNKIA.

F. SIEBOLDIANA, *Lodd. Bot. Cab.*, t. 1869; and *Bot. Mag.*, t. 3663.

This is a very beautiful species with white flowers, bearing a considerable resemblance, though of a smaller size, to those of the common Japan Day Lily. It is a native of Japan, and was introduced about 1830.

F. ALBO-MARGINATA, *Hook.*, *Bot. Mag.*, t. 3657.

This appears to be a hybrid between the purple and the white Japan Day Lily, as the flowers are purple, edged with white. The leaves have also a white margin, and are remarkable for the extreme length of their petioles.

CHAPTER XLV.

COMMELINACEÆ.

CHARACTER OF THE ORDER.—Sepals three, distinct from the petals, herbaceous. Petals coloured, sometimes cohering at the base. Stamens six, or a smaller number, hypogynous, some of them either deformed or abortive. Ovary three-celled, with few-seeded cells; style one; stigma one. Capsule two or three-celled, two or three-

valved, the valves bearing the dissepiments in the middle. Seeds often twin, inserted by their whole side on the inner angle of the cell, whence the hilum is linear; embryo pulley-shaped, antitropous, lying in a cavity of the albumen remote from the hilum; albumen densely fleshy. (*Lindley*.)

DESCRIPTION, &c.—All the plants belonging to this order are herbaceous, and their leaves generally sheath the stem at the base. Most of the species are natives of hot countries, and the only two genera which contain hardy ornamental herbaceous plants are *Tradescantia* and *Commelina*.

GENUS I.

TRADESCANTIA, *Lin.* THE SPIDER-WORT.*Lin. Syst.* HEXANDRIA MONOGYNIA.

GENERIC CHARACTER.—Perianth deeply six-parted, the inner segments petal-like, and the outer ones forming a kind of calyx. Stamens

six, spreading; filaments fringed with articulated hairs; anthers two-lobed, crescent-shaped; pollen bright yellow. Capsule three-celled.

DESCRIPTION, &c.—Most of the species belonging to this genus are stove plants in British gardens. A few kinds, however, are hardy. The name of *Tradescantia* was given to this genus, in honour of John Tradescant, gardener to Charles I., in whose time the first species introduced was brought to England. The name of Spider-wort alludes to the appearance presented by the leaves of the plant when broken; which, from their brittle and fleshy nature, often is the case. When this occurs, if the two broken parts of the leaf are drawn slowly apart, the spiral vessels are distinctly visible to the naked eye, and look very much like spiders' threads.

1.—TRADESCANTIA VIRGINICA, *Lin.* THE COMMON SPIDER-WORT.

ENGRAVINGS.—Bot. Mag., t. 105; and our *fig.* 1, in Pl. 96.

SPECIFIC CHARACTER.—Stem erect; scape many-flowered.

DESCRIPTION, &c.—This is a well-known plant, which has been common in British gardens for more than 200 years; having been introduced by John Tradescant, gardener to Charles I., about 1629. There are several varieties, one of which has purple flowers, and another white flowers; the flowers of the species being of a beautiful bright blue. The flowers are very ornamental, but last a very short time. The plant is a native of Virginia, and it is quite hardy in British gardens. It is propagated by dividing the roots.

OTHER SPECIES OF TRADESCANTIA.

T. ROSEA, *Michx.*; Sweet's Brit. Flow. Gard., t. 183.

A pretty little plant, with small rose-coloured flowers, which it produces from August till October. It is a native of Carolina, whence it was introduced in 1802. It grows best in peat.

T. SUBASPERA, *Ker.*; *Bot. Mag.*, t. 1597.

A very handsome species, from its smooth dark green leaves and rich purple flowers. The stamens are very conspicuous, from their golden-yellow anthers. The stigma is white, and the pedicles to the flowers are of a bright pink. It is a native of North America, whence it was introduced in 1812.

GENUS II.

COMMELINA, *Lin.* THE COMMELINA.

Lin. Syst. TRIANDRIA MONOGYNIA.

GENERIC CHARACTER.—Perianth six-parted, unequal; the three outer leaflets having the appearance of the calyx, and persistent; the three inner ones having the appearance of petals, unguiculate, and deciduous. Filaments five or six, but only three fertile. Involucre monophyllous, folded, or hooded, persistent, including the capsule.

DESCRIPTION, &c.—The genus *Commelina* was named by Linnæus in honour of Gaspar and John Commeline, two Dutch botanists. There are about thirty species, but only one is common in British gardens.

1.—COMMELINA CÆLESTIS, *Willd.* THE SKY-BLUE COMMELINA.

SYNONYME.—*C. tuberosa*, *Sims.*

ENGRAVINGS.—*Bot. Mag.*, t. 1695; Sweet's *Brit. Flow. Gard.*, t. 3; and our *fig.* 2, in Pl. 96.

SPECIFIC CHARACTER.—Corolla regular; involucre cordate, acuminate, conduplicate; racemes many-flowered; peduncles pubescent; pedicles glabrous; leaves oblong-lanceolate, sessile, glabrous, undulated at the margin; sheaths fringed; stem erect.

DESCRIPTION, &c.—The root consists of a fascicle of long subcylindrical tubers. There are numerous stems, and the flowers are of the most beautiful sky-blue that can be imagined; but their beauty is of very short duration, as they fall off soon after they expand. The flowers are produced in autumn, and as soon as they have faded, and the leaves have begun to wither, the tubers must be taken up, and kept in a little dry sand, out of the reach of the frost, till the following spring. In April, or the beginning of May, they must be replanted in the open border, in a light sandy soil. The species is a native of Mexico, and was introduced in 1813.

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